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THE JOURNAL
OF THE
TENNESSEE
State Medical Association

Owned, Published and Controlled by the Tennessee State Medical Association
ISSUED MONTHLY under Direction of the Trustees
H. H. SHOULDERS, M.D., Secretary and Editor
OFFICE OF PUBLICATION, 508 DOCTORS BUILDING, NASHVILLE, TENNESSEE

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CATALOGUED
F. K. M.

Vol. XXXI
Number 1
JANUARY, 1938
Single Copy, 20 Cents
Per Year, $2.00

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ENTERED AS SECOND-CLASS MATTER, MAY 29, 1908, AT THE POST OFFICE AT NASHVILLE, TENN., UNDER THE ACT OF MARCH 3, 1879.

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Nutritional Anemia in Infants

THE iron stored in the infant's liver at birth is rapidly depleted during the first months of life (Mackay,[1] Elvehjem[2]). During this period the infant's diet contains very little iron—1.44 mg. per day from the average bottle formulae of 20 ounces, or possibly 1.7 mg. per day from 28 ounces of breast milk (Holt[3]). For these reasons, and also because of the low hemoglobin values so frequent among pregnant and nursing mothers (Coons,[4] Galloway[5]), the pediatric trend is constantly toward the addition of iron-containing foods at an earlier age, as early as the third or fourth month (Blatt,[6] Glazier,[7] Lynch[8]).

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Volume XXXI JANUARY, 1938 No. 1

SOME MEDICAL REFERENCES IN SHAKESPEARE*

W. H. WITT, M.D., Nashville

IN 1916, on the occasion of the three hundredth anniversary of the death of Shakespeare, Dr. St. Clair Thompson, a distinguished British physician, in an address before the Medical Society of London had this to say: "If any one of us today had to name the author which every medical man should deeply study with diligence and delight, surely it would be the greatest of our great Englishmen, William Shakespeare. The science of medicine progresses, but human nature remains the same, and the foundations of physiology are fixed. Shakespeare's plays will be read by physicians when every medical treatise of the present year will have been completely eclipsed, and the works of this master of medicine will continue to be studied by future generations until 'there shall be no more death.'" I came across this item some months after I had prepared this paper, and I reproduce it here as high justification for what you are to hear tonight.

How relatively stale and unprofitable literature would be if what Shakespeare has written and what others have written about him were snatched from the reading world! I have no ability to appraise him as purely a dramatist in our modern interpretation of the word, even less may I have an opinion of him as a poet, but as the one of all time who has plumbed the depths of human reactions and has given them the dignity and beauty of words, who grasped the essentials of all the scientific knowledge of his age, I hold he comes so near to one of ordinary comprehension that I may claim him as an indispensable, indispensable because he clung so close to the basic things of life, and that even in his more poetical and imaginative writings.

The life and conduct of all men are molded, potentially at least, by the fundamental passions of love, hate, jealousy, envy, fear, ambition, avarice, disappointment, etc., and it is on these in all their ramifications that this genius exercises his poetic and dramatic power. His knowledge of the law has been openly adduced as a reason for doubting the accepted authorship of his works and their assignment to Francis Bacon. We might as easily confuse him with a trained sailor, an apothecary, a musician; much more easily claim he was a physician. For one who was observant enough to analyze the conduct of men and women under the most diverse extremities, who could make a whole world of fancy as in the Tempest and Midsummer Night's Dream, and all so true to human reactions, material and spiritual, is it any wonder that he could know much of the appearance and progress of physical disease, and above all to have grasped the multitudinous reactions of the human mind to the vicissitudes of life whether that life was one of high or low degree? That you or I could go into the shop of the apothecary and see nothing but the miserable parcel we purchased is no reason why one of genius might not see at one glance all that Shakespeare sees and describes in the apothecary of Romeo and Juliet. That you and I may drift along through life and have only a vague idea of the various phases of man's normal physical development and its equally normal decline is no reason to doubt that some one can see it all and, what is more, express it in immortal words, as Shakespeare does when he makes the melancholy Jacques say:

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*Read before the Davidson County Medical Society and Nashville Academy of Medicine, Nashville, November 2, 1937.

"And one man in his time plays many parts,
His acts being seven ages. At first, the infant
Mewling and puking in the nurse's arms.
Then, the whining schoolboy, with his satchel,
And shining morning face, creeping like snail
Unwillingly to school. And then, the lover,
Sighing like furnace, with a woeful ballad
Made to his mistress' eyebrow. Then the soldier,
Full of strange oaths, and bearded like the pard,
Jealous in honor, sudden and quick in quarrel,
Seeking the bubble reputation
Even in the cannon's mouth. And then, the justice,
In fair round belly, with good capon lin'd,
With eye severe and beard of formal cut,
Full of wise saws and modern instances;
And so he plays his part. The sixth age shifts
Into the lean and slipper'd pantaloon,
With spectacles on nose and pouch on side;
His youthful hose, well saved, a world too wide
For his shrunk shank, and his big manly voice,
Turning again toward childish treble, pipes
And whistles in his sound. Last scene of all,
That ends this strange eventful history,
Is second childishness, and mere oblivion;
Sans teeth, sans eyes, sans taste, sans everything."

And it took no physician to see and say that. It took the genius to observe and the genius to reduce the observation to words. For indeed this is not medical knowledge in the narrow sense. It is what any observant person might see, and the bulk of the quotations I shall make have no reference to organic disease, but set forth the logical reactions of the mind and body under mental or physical stress. And they will be seen to apply to such reactions normal or abnormal as any layman might observe and not to any detail of description of disease and its treatment. However, certain quotations will have reference to actual disease processes and the crude ideas of treatment prevalent in the Elizabethan era. And some of those crudities are about as far as modern medicine has yet advanced. It is to be remembered that Shakespeare had a son-in-law, Dr. John Hall, an outstanding man too, from whom he may have derived at least a portion of his observations on disease and drugs.

In the study and demonstration of physiological processes in the human body nothing in medical history was more dramatic and far-reaching than Harvey's demonstration of the circulation of the blood. This was published in 1628, twelve years after the death of Shakespeare. This demonstration was thoroughly scientific—left nothing to guesswork.

Shakespeare's references to the flow of the blood and the function of the heart, the filling and emptying of the veins are many. It is quite sure Shakespeare did not understand the details of blood flow, though it is possible he had a personal acquaintance with Harvey. However, it is to be remembered that the right conception of the function of the heart—receiving venous blood in the right chambers which sent it to the lungs and thence to the left chambers which pumped it through the arteries to all the body—had been taught long before—though not, of course, generally accepted. Galen, 150 A.D., had taught that the left ventricle was the common origin of all the arteries and that the arteries of animals contained blood, not air—as generally believed, founded on the fact that after death they are essentially empty tubes. Servetus also, about 1550, had taught correctly the functions of the right and left ventricles. The general acceptance in Shakespeare's time was that the veins carried blood to the heart and the arteries had air or vital spirits, whatever that meant.

Brutus speaks of his wife as dear to him "as the ruddy drops that visit his sad heart." In Coriolanus we read, "Rivers of blood are sent even to the court—the heart." In Henry VI, Warwick, referring to death from natural causes, speaks of the blood "being all descended to the laboring heart, which in the conflict that it holds with death attracts the same for aidance 'gainst the enemy: which with the heart there cools and ne'er returneth to blush and beautify the cheek again," and to confirm his suspicion that Gloster has been strangled and the return of the blood to the heart hindered, he calls attention to the contrast, remarking that "the face is black and full of blood, his eyeballs further out than when he lived staring full ghastly like a strangled man." There are a number of passages bearing on the return of the blood to the heart and implying that in some way this organ was the center of the circulation. Frequent references connect the heartbeat with the pulse and its variation in rate and force under circumstances of fever, fear, and excitement.

The role of the liver in the circulation of the blood was regarded as important, as in a sense it is, and was the occasion of several references. Falstaff speaks quite elegantly of the value of "sherris" in warming of the blood in the liver and how it then leaves the liver and makes a man ready to fight and win. It is quite possible Falstaff was more against prohibition than he was striving to sustain a principle of physiology.

The reference reads: "The second property of your excellent sherris is, the warming of the blood, which, before cold and settled, left the liver white and pale, which is the badge of pusillanimity and cowardice, but the sherris warms it, and makes it course from the inwards to the parts extreme. It illumineth the face, which, as a beacon, gives warning to all the rest of this little kingdom, man, to arm; and then the vital commoners and inland petty spirits muster me all to their captain, the heart, who, great, and puffed up with this retinue, doth any deed of courage; and this valor comes of sherris."

Mental States

Just at what point physiologic processes cease and disease begins is often impossible of answer. Just when the mind ceases to be normal and a psychosis develops no one can say with accuracy. There are many characters in Shakespeare's plays that vary from what we call the normal—the transition being due in some cases to physical changes incident to age, as in Lear, though Lear was a psychopath beside. Some are frankly insane as Ophelia and Timon of Athens. Some are doubtful, as Hamlet himself; not that Hamlet feigned insanity throughout, but apart from his hallucinations of sight it is not so easy to classify him as insane, unless we assume that his treatment of Ophelia was that of a madman. That he had hallucinations was no more than his friends and the castle guards had and at least in Shakespeare's view was no evidence of insanity. Incidentally I confess a lack of interest in Hamlet as an individual or in Hamlet as a play, though quite entranced by the extensive list of quotable passages. Hamlet as an individual and Hamlet as a drama are quite beyond my feeble grasp.

In Shakespeare's time the insane were supposed to be under spell by some Satanic power—witchcraft or some type of demon. The general idea of treatment was exorcism by charms and talismans. It is to Shakespeare's credit that he had a much more modern concept of mental aberrations and a saner view of their management. The effect of an unfavorable atmosphere and of disappointment or other reverses is stressed at different times, and the curative effect of release from such an atmosphere is stressed in several instances. Lady Macbeth, for instance, is for a time equal to all demands that may be made, even to the stabbing of Duncan if it had been necessary, but under the continued strain she breaks, and while her mental aberrations and her illusions are manifested at a time of sleepwalking, they may have been as marked in her waking hours; the attending physician reads a confession of crime in her ravings. The doctor says, "Unnatural deeds do breed unnatural troubles. Infected minds to their deaf pillows will discharge their secrets—more needs she the Divine than the physician." But he then gives the right medical advice. "Look after her—remove from her the means of all annoyance," a principle of treatment considered now of the greatest value. Later, Macbeth wheels suddenly from talk of war and clamors for more active therapeutic effort for his lady. Something of a narcotic must in his opinion be tried—a method of treatment often employed in modern times.

Macbeth: "How does your patient, doctor?"

Doctor: "Not so sick, my lord, as she is troubled with thick coming fancies, that keep her from her rest."

Macbeth (probably impatiently): "Cure her of that! Canst thou not minister to a mind diseased? Pluck from the memory a rooted sorrow, raze out the written troubles of the brain; and with some sweet oblivious antidote, cleanse the stuffed bosom of that perilous stuff which weighs upon the heart."

A very reasonable request from the layman's viewpoint. Then the doctor lays down a broad principle that throws the burden of the treatment on the patient rather than on the doctor; though Macbeth's suggestion of an "oblivious antidote" was not bad; but the doctor wished to go further back. He discards the personal element and says: "Therein the patient must minister to himself." He says nothing about herself. Then Macbeth replies as the layman so often replies when told that a cure is to be effected more by the patient than by the doctor: "You mean, doctor, there is no medicine that will help me?" is often the reply we get as in the case of a young man I saw a few weeks ago—late hours, alcohol, and thirty cigarettes a day were undermining his system—and when I said early to bed, no alcohol, few cigarettes, he paraphrased Macbeth, and voiced his disappointment. If Macbeth had been more modern, he would have said when the doctor said the patient must minister to himself: "The hell you say!" but he expressed his disgust even better and then went about his own business, leaving Lady Macbeth to work out her own salvation.

Macbeth (no doubt furiously): "Throw physic to the dogs, I'll none of it."

Then at once in the same paragraph he turns to his own troubles—the approaching English army: "Come fit mine armor on: give me my staff," etc. "If thou couldst, doctor, cast the water of my land, find her disease, and purge it to a sound and pristine health, I would applaud thee to the very echo, that should applaud again. Pull't off I say—what rhubarb, senna or what purgative drug would scour these English hence?"

Reference is here made to urine test for diagnosis—merely looking at the specimen and the value of purges to clear away disease—still too much used. Then the human side of the doctor comes out.

Doctor (aside):

"Were I from Dunsinane away and clear,
Profit again should hardly draw me here."

These two lines almost convince me Shakespeare was a doctor.

In Lear (4-4) we find a complicated mental state. Probably normally a psycopath, his fortunes and his exposure to the elements have further unsettled his mind—he sings and is dressed in weeds and wild flowers:

Cordelia: "What can man's wisdom in the restoring his bereaved sense?"

The physician advises rest.

Physician: "There is means, madam. Our foster-nurse of nature is repose the which he lacks. That to provoke in him, are many simples operative—whose power will close the eye of anguish."

Cordelia (no doubt screaming): "All blessed secrets, all you unpublished virtues of the earth spring with my tears—be aidant and remediate in the good man's distress."

In the Comedy of Errors, Shakespeare comes to the rescue of his fellow male Antipholus who has had to live with a nagging wife, and makes out a good case for poor hubby to be allowed a few liberties. According to the abbess of the Priory in which he had taken refuge, his sad state had been brought about by home conditions and she gives wifey a piece of her mind as follows:

"The venom clamors of a jealous woman,
Poison more deadly than a mad dog's tooth.
It seems, his sleeps were hind'red by thy railing,
And thereof comes it, that his head is light.
Thou say'st his meat was sauc'd with thy unbraidings:
Unquiet meals make ill digestions,
Thereof the raging fire of fever bred;
And what's a fever but a fit of madness?
Thou say'st, his sports were hinder'd by thy brawls;
Sweet recreation barr'd, what doth ensue,
But moody and dull melancholy,
Kinsman to grim and comfortless despair;
And at her heels a hugh infectious troop
Of pale distemperatures and foes to life?"

SLEEP

The value of sleep in maintaining a normal working of all our organs is fundamental to any reasonable degree of health. Nowhere in literature are its praises so well voiced as in Shakespeare. The guilty Macbeth, no doubt semidelirious, thinks he heard a voice cry, "Sleep no more; Macbeth doth murder sleep. The innocent sleep. Sleep that knits up the raveled sleeve of care, the death of each day's life, sore labor's bath, balm of hurt minds, great nature's second course, chief nourisher in life's feast."

The induction of sleep by drugs was well known in Shakespeare's day as indeed long before. The references are many—some entirely consistent with modern practice and modern pharmacology, but in some cases actions are claimed the proof of which is, according to our standards, lacking. Duncan's grooms must be silenced for his murder by Macbeth and Lady Macbeth knows the means. She says, "I have drugged their possets, that death and nature do contend about them, whether they live or die." And in Antony and Cleopatra when Antony leaves for Rome:

Cleopatra: "Give me to drink mandragora."

Charmian: "Why, madam?"

Cleopatra: "That I might sleep out this great gap of time my Antony is away."

And after Iago has poisoned the mind of Othello against Desdemona, he says of Othello: "Look where he comes! Not poppy nor mandragora, nor all the drowsy syrups of the world shall ever medicine to that sweet sleep which thou own'st yesterdays."

And beside induced but reasonably normal sleep we find many references to a sleep that is a counterfeit of death, from which the victim recovers hours or days later. Such is the drug given Juliet by Friar Lawrence. But when Romeo comes and thinks he sees Juliet cold in death, he has a very different narcotic bought of the impoverished apothecary in Mantua.

Romeo: "Come hither, man, let me have a dram of poison. Such soon speeding gear that will disperse itself through all the veins; that the life-weary token may fall dead and that the trunk may be discharged of breath as violently as hasty powder fired doth hurry from the fatal cannon's womb."

Of similar strength and power is the drug used in the murder of Hamlet's father. And so later on in that play:

Laertes: "I bought an unction of a mountebank, so mortal that, but dip a knife in it, where it draws blood no cataplasm so rare, collected from all the simples that have virtue under the moon, can save the thing from death that is but scratched withal."

So far as I know we have no drug that counterfeits death in the sense of its use in the sleep of Juliet or other similar instances in Shakespeare's works. We do, however, have several drugs or combinations of drugs that produce similar but shorter lived narcotism, often spoken of as twilight sleep.

THE EFFECT OF FOOD ON OUR SPIRITS

Did we have a forecast of hypoglycemia and its effect on the spirits in the following from Coriolanus?

Menennius: "I'll undertake it. I think he'll hear me. Yet to bite his lip and hum at good Pominius much unhearts me. He was not taken well; he had not dined. The veins unfilled, our blood is cold, and then we pout upon the morning, are unapt to give or forgive: but when we have stuffed these pipes, and these conveyances of our blood with wine and feeding, we have suppler souls than in our priest-like fast."

Other references too there are that testify to the betterment of one's disposition after a liberal meal with or without drink.

In Shakespeare's time and long afterward jaundice was supposed to be caused by mental states, especially those associated with worry. Dr. Watson, a standard medical author of a hundred and more years ago, was convinced that jaundice was often so produced. He spoke of a friend who became jaundiced by worrying over coming examinations and said he had known scores of similar instances. The fact that jaundiced people are apt to be a bit depressed adds color to the old idea that the mental state was a cause rather than an effect.

In Merchant of Venice, 1-1: "Why should a man whose blood is warm within sit like his grandsire cut in alabaster? and sleep when he wakes? and creep into the jaundice by being peevish?"

And in Troilus and Cressida, 1-3: "What grief hath set the jaundice in your cheeks?"

We are apt to think of animal experimentation as an expression solely of the modern scientific spirit. It is quite established that such tests as were made in ancient and medieval times were largely to try out the effect of poisons, whether results were to be secured by narcotics or other drugs.

In Cymbeline the queen had studied narcotics with Dr. Cornelius, apparently in the interest of science, but the doctor was wise enough to see she had designs on certain persons. When she asks him for narcotics, he wants to know why she desires such poisonous compounds.

The queen: "I wonder, doctor, thou askest me such a question! Have I not been thy pupil long? Hast thou not learned me how to make perfumes? distil, preserve? Yea, so that our great king himself doth woo me oft for my confections? Having thus far proceeded, unless thou thinkest me devilish, is it not meet that I should amplify my judgment to other conclusions? I will try the forces of these compounds on such creatures as we count not worth the hanging (but none human) to try the vigor of them, and apply allayments to their act, and by them gather their several virtues and effects."

The doctor's answer, not exactly frank, implies a deep discernment of a certain human weakness, probably best illustrated by the too common experience of a boy that learns to shoot a gun; he has an urge to use it wrongly—even to shooting a playmate.

Dr. Cornelius says, and we must admire his boldness: "Your highness shall from this practice but make hard your heart. Besides the seeing these effects will be both noisome and infectious."

Then says aside: "First, perchance, she'll prove on cats and dogs, then afterward up higher."

In All's Well That Ends Well the story hangs largely about a remarkable cure of the king of what in one place is called a fistula, but it is quite possible that diagnosis was purely hearsay. Gerard de Narbon, dead now six months, appears to have been a physician of high standing. His daughter, Helena, had knowledge of his therapeutic methods and pressed herself on the king after all his physicians had given up his case—claimed she could cure him, and did. Her method is not mentioned, and the result of her treatment is announced in this wise.

The king: "Sit, my preserver, by thy patient's side, and with this healthful hand, whose banished sense thou hast repealed, a second time receive the confirmation of my promised gift, which but attends thy naming."

The wording here and the quickness of the cure—in less than two days—suggests he had a hysterical, a functional, paralysis of an arm—a cure of which by suggestion might have been very rapidly consummated. In a previous scene the king had asked Bertram to "lend him an arm," which might mean the arm was weak, though that, of course, is just a surmise on my part.

The main features of epilepsy were well known to Shakespeare, and one reference may be quoted from Julius Caesar:

Casca: "He fell down in the market-place, and foamed at mouth, and was speechless."

Brutus: "'Tis very like—he has the falling sickness."

Casca: ". . . When he came to himself again, he said, if he had done or said anything amiss, he desired their worships to think it was his infirmity." (Act I, Scene II.)

A similar situation occurs when Othello on hearing Iago's insinuations about Desdemona goes into what is called a trance. He probably fainted.

Iago:

"My lord is fall'n into an epilepsy:
This is his second fit; he had one yesterday."

Cassio: "Rub him about the temples."

Iago:

"No, forbear;
The lethargy must have his quiet course;
If not, he foams at mouth, and by and by
Breaks out to savage madness."

(Act IV, Scene I.)

They still crowd about a fainting person, cutting off the fresh air so much needed.

There is an old impression that overweight is under mind. Some types of obesity are stupid in intellect.

"Fat pouches have lean pates, and dainty bits
Make rich the ribs, but bankrupt quite the wits."

(Love's Labour's Lost, Act I, Scene I.)

The effect of worry and strain on body functions is stressed in several passages as "Unquiet meals make ill digestions." (Comedy of Errors, Act V, Scene I.)

Malaria was well known to Shakespeare. "He is so shaked of a burning quotidian tertian, that it is most lamentable to behold." (Henry V, Act II, Scene I.)

"An untimely ague stay'd me a prisoner in my chamber." (Henry VIII, Act I, Scene I.)

In Julius Caesar we have this description of a chill:

"He had a fever when he was in Spain,
And, when the fit was on him, I did mark
How he did shake: 'tis true, this god did shake:
His coward lips did from their colour fly;
And that same eye whose bend did awe the world
Did lose his lustre: I did hear him groan:
Ay, and that tongue of his, that bade the Romans
Mark him, and write his speeches in their books,
Alas! it cried, *Give me some drink, Titinius,*
As a sick girl."

(Julius Caesar, Act I, Scene II.)

From time immemorial the public has been convinced, rightly or wrongly, of the bad effect of damp and swampy areas, malaria especially being feared. Such areas are the home of the mosquito. Caliban rails at Prospero: "All the infections that the sun sucks up from bogs, fens, flats, on Prosper fall, and make him by inch-meal a disease!" (Tempest, Act II, Scene II.) Also, "It is not for your health thus to commit your weak condition to the raw cold morning." (Julius Caesar, Act II, Scene I.)

Brutus tries to deceive Portia when she notes his peculiar behavior, and he tells her he is sick.

Portia:

"Is Brutus sick,—and is it physical
To walk unbraced, and suck up humours
Of the dank morning? What, is Brutus sick,
And will he steal out of his wholesome bed,
To dare the vile contagion of the night,
And tempt the rheumy and unpurged air
To add unto his sickness?"

(Act II, Scene I.)

Preventive measures and quarantine were in effect: "The searchers of the town suspecting that we both were in a house where the infectious pestilence did reign, sealed up the doors and would not let us forth." (Romeo and Juliet, Act V, Scene II.)

Contagiousness of disease was understood: "Men take diseases, one of another: therefore, let men take heed of their company." (Henry IV—2d, Act I, Scene 1.) "Sickness is catching." (Midsummer Night's Dream, Act I, Scene I.)

Treatment by early laxatives was common and still is. "We sicken to shun sickness when we purge." (Sonnets, CXVIII.) Also, previously quoted, "What rhubarb, senna, or what purgative drug would scour these English hence?" (Macbeth, Act V, Scene III.)

Bleeding was prevalent and on to 1860 or later:

"Let's purge this choler without letting blood:
This we prescribe, though no physician:

* * *

Our doctors say, this is no month to bleed."
(Richard II, Act I, Scene I.)

The harm of delay in administering medicines is claimed in the following:

"That gentle physic, given in time,
Had cur'd me; but now I am past all aid."
(Henry VIII, Act IV, Scene II.)

That different portions of a vegetable drug may have very different effect is maintained in this from Romeo and Juliet:

"Within the infant rind of this weak flower
Poison hath residence, and medicine power:
For this, being smelt, with that part cheers each part;
Being tasted, slays all senses with the heart." (Act II, Scene III.)

There has always been recognition of drastic emergency procedures—chiefly in surgery. "Diseases desperate grown, by desperate appliance are reliev'd or not at all." (Hamlet, Act IV, Scene III.)

In Troilus and Cressida the scurrilous Thersites indulges his spleen in a nice enumeration of loathsome diseases: "Now the rotten diseases of the south, the guts-griping, ruptures, catarrhs, loads o' gravel i' the back, lethargies, cold palsies, raw eyes, dirt-rotten livers, wheezing lungs, bladders full of imposthume, sciaticas, lime-kilns i' the palm, incurable boneache, and the rivelled fee-simple of tetter, take and take again such preposterous debaucheries." (Act V, Scene I.)

It would be difficult to portray the signs of approaching death in more telling words than these from Henry V, describing the death of Falstaff. " 'A made a finer end, and went away, an it had been any Christian child; 'a parted even just between twelve and one, even at the turning of the tide; for after I saw him fumble with the sheets, and play with flowers, and smile upon his finger's ends, I knew there was but one way; for his nose was as sharp as a pen, and 'a babbled of green fields.' * * 'a bade me lay more clothes on his feet; I put my hand into the bed and felt them, and they were as cold as any stone; then I felt his knees, and so upwards, and upwards, and all was as cold as any stone." (Act II, Scene III.) But I doubt such a dying man would call for more cover.

Also the following from Henry VIII, describing the apparent death of Katharine:

Patience:

"Do you note how much her grace is alter'd on the sudden?
How long her face is drawn? How pale she looks, and of an earthy cold! Mark her eyes."

Griffith: ". . . She is going. Wench: Pray: Pray: Pray!" (Act IV, Scene II.)

Signs of Death

There are at least two references to the use of a feather to detect the presence of breathing.

"By his gates of breath
There lies a downy feather, which stirs not;
Did he suspire, that light and weightless down
Perforce must move."
(Henry IV—2d, Act IV, Scene IV.)

Also:

"Lend me a looking-glass;
If that her breath will mist or stain the stone,
Why then she lives."
(King Lear, Act V, Scene III.)

Measures to stop bleeding are of course as old as man: "I shall desire you of more acquaintance, good master cobweb. If I cut my finger, I shall make bold with you." (Midsummer Night's Dream, Act III, Scene I.)

"I'll fetch some flax, and whites of eggs to apply to 's bleeding face." (King Lear, Act III, Scene VII.)

The following suggests the error in incomplete treatment of an infected area. "It will but skin and film the ulcerous place." (Hamlet, Act III, Scene IV.)

Shall it be married life or celibacy? The Duke Theseus says:

"Fair Hermia, question your desires,
Know of your youth, examine well your blood,
Whether, if you yield not to your father's choice,
You can endure the livery of a nun:
For aye to be in shady cloister mew'd
To live a barren sister all your life,
Chanting faint hymns to the cold fruitless moon.
Thrice blessed they that master so their blood,
To undergo such maiden pilgrimage;
But earthly happier is the rose distill'd
Than that, which, withering on the virgin thorn,
Grows, lives, and dies in single blessedness."
(Midsummer Night's Dream, Act I, Scene I.)

"The very image of his daddy" is a remark the nurse and the doctor always make to the proud father. Nurse to Henry VIII: "'Tis a girl . . . as like you as cherry to cherry." (Act V, Scene I.)

Just think of a baby looking like Henry VIII.

And so in Winter's Tale Paulina defends the chastity of the queen, the legitimacy of the baby:

"Behold, my lords, although the print be little, the whole matter and copy of the father,—eye, nose, lip; the trick of 's frown; his forehead; nay, the valley, the pretty dimples of his chin and cheek; his smiles, the very mould and frame of hand, nail, finger." (Act II, Scene III.)

A belief in maternal impressions was well established:

"I the rather wean me from despair,
For love of Edward's offspring in my womb;
This is it that makes me bridle passion,
And bear with mildness my misfortune's cross;
Ay, ay, for this I draw in many a tear,
And stop the rising of blood-sucking sighs,
Lest with my sighs or tears I blast or drown
King Edward's fruit, true heir to the English crown."
(Henry VI—3d, Act IV, Scene IV.)

Capricious appetite of a pregnant woman is referred to in "She came in great with child, and longing for stewed prunes." (Measure for Measure, Act II, Scene I.)

The pains of labor are referred to in the following:

"Lucina, O
Divinest patroness, and midwife gentle
To those that cry by night, convey thy deity
Aboard our dancing boat; make swift the pangs
Of my queen's travails!"
(Pericles, Act III, Scene I.)

"The queen's in labour,
They say, in great extremity; and fear'd
She'll with the labour end."
(Henry VIII, Act V, Scene I.)

"The queen's in labour, . . . Her sufferance made
Almost each pang a death."
(Henry VIII, Act V, Scene I.)

Caesarean section was known to Shakespeare. When confronted by MacDuff, Macbeth claims a "charmed life which must not yield to one of woman born."

MacDuff: "Despair thy charm and let the angel whom thou still has served tell thee MacDuff was from his mother's womb untimely ripp'd." (Macbeth, Act V, Scene VIII.)

That the stomach is an organ of real dignity is claimed in the following from Coriolanus:

"True it is, quoth the belly,
That I receive the general food at first,
Which you do live upon; and fit it is,
Because I am the store house and the shop
Of the whole body; but if you do remember,
I send it through the rivers of your blood,
Even to the court, the heart—to the seat o' the brain;

And, through the cranks and offices of man,
The strongest nerves and small inferior veins,
From me receive that natural competency
Whereby they live." (Act I, Scene I.)

Then as now appetizers were clamored for:

"To make our appetites more keen,
With eager compounds we our palate urge." (Sonnets, CXVIII.)

The following from Cleopatra calls attention to the meaning of physiognomy. Reference is here made to Octavia—recently betrothed to Antony—much to Cleopatra's disgust. A messenger has just arrived from Rome with the sad news.

Cleopatra: "Bear'st thou her face in mind. Is't long or round?"

Messenger: "Round, even to faultiness."

Cleopatra:

"For the most part too,
They are foolish that are so. Her hair, what colour?"

Messenger:

"Brown, madame, and her forehead
As low as you would wish it."
(Act III, Scene III.)

In Macbeth we find this great human truth. "The labor we delight in physics pain." Here in seven words Shakespeare lays down the principle that pleasant occupation goes far to bring health and happiness. The thought readily includes the environment in which work is done. The man, woman, or child whose work is distasteful becomes the easy victim of many symptoms which, while they are functional, are nonetheless crippling and may indirectly lead to organic disease. Many a woman's headache vanishes on receipt of an invitation to the right luncheon.

Menopausal symptoms mean much less when the new grandbaby arrives. Hot flashes take to the attic with every change of a diaper. And the reverse is just as true. What we do not delight in brings on pain. Just a year ago a friend of mine, on realizing that a very distinguished officeholder had been reelected by an unprecedented majority, got sick at the stomach, vomited, had a diarrhea, paroxysmal tachycardia, and two convulsions—one Jacksonian and one Jeffersonian.

Now I do not pose as a Shakespearean scholar, and it is not as one versed in his writings—not even as one who has paid especial attention to the medical aspects of his works—that I have suggested the subject we have had tonight. Yet I hold it as a sacred duty to have some knowledge of this prince of all that long line who have reduced to words their flights of fancy, or who have essayed to analyze the hopes, the fears, the greatness and the baseness of this strange thing we call man. An appreciative world has, without any doubt, come to the conclusion that we may adapt to his glory Shakespeare's own words about man, paraphrasing! "What a piece of work is Shakespeare. How noble in reason; how infinite in faculties, in action how like an angel, in apprehension how like a god! The beauty of the world, the paragon of mankind!"

And now I take pleasure in nominating Dr. William Shakespeare for honorary membership in our medical association. Listen to what he has to say and you will never regret it.

NOTE.—Several books have been written on the medical features of Shakespeare's writings. Among those are two by J. C. Bridewell, one each by C. W. Stearns, A. O. Kellogg, J. P. Chesney, B. N. Field, J. Mayes, H. B. Epstein, and Joe W. Wainwright. So far as I know all are out of print except that by Epstein—the Lasky Company, Newark, N. J.—two volumes. Those by Kellogg and Wainwright are in the state library at Nashville.

CHRONIC MIDDLE EAR AND MASTOID INFECTION*

M. M. CULLOM, M.D., Nashville

WHEN WE ARE called upon to launch an offensive against an entrenched enemy it is of the utmost importance to make a careful study of his habits. Before we can make an intelligent plan it is necessary to know how strongly he is fortified. It is necessary to know his base of supplies and where located. A frontal attack should never be made if there is a possibility of coming upon the enemy from the rear. We should attempt first to capture his base.

When we are confronted with a chronic purulent otitis media there is one thing that should be uppermost in our minds. We should always remember that a middle ear infection is to all intents and purposes a secondary infection. It is just as true that middle ear infection is secondary as it is that tubercular laryngitis is secondary. Remembering this we should always look for the primary focus in its accustomed place. I believe the primary focus is practically always in an infected sinus. At the time we are called on to examine the chronic purulent otitis the primary focus in the sinus may have temporarily or permanently cleared up so that we are unable to connect the original criminal with the crime we are investigating. It may be that the present base of supplies is located in an infected mastoid cell. It may be that the criminal is being given aid and comfort by infected adenoids and tonsils. The most fortunate discovery is that the enemy has dug himself in within the cavity of the middle ear itself, for it is in this situation that his destruction is most easily accomplished.

So then we are now prepared to draw up a plan of campaign. The first and a most important step is the history. We inquire carefully how long the discharge has been noted. Did the discharge make its appearance following an illness? If so what was the nature of the illness? We most frequently find that the discharge followed an attack of scarlet fever, measles, pneumonia, influenza or diphtheria. Oftentimes the history of the discharge goes back into infancy or early childhood and the patient is unable to give us any history of an illness. In that case we have to assume that the discharge followed one of the exanthematous diseases. Oftentimes the patient attributes the discharge to an acute cold. Those cases we are inclined to classify as an acute exacerbation of a chronic sinus infection. There are many cases following a plunge in a swimming pool or open water. It will generally be found that chronic cases with this history also have a chronic infection of a sinus or sinuses. What happened was the patient flooded the opening of his Eustachian tube with some of the pus from his own sinuses. Then there are the nasal douche cases which are strictly analogous to the swimming cases. They wash the pus from their own infected sinuses into the Eustachian tube. Likewise the cases following nasal packing are caused by a transfer of the infected material to the tube. In the course of our inquiry we may find that the discharge came on without any cause so far as the patient could tell. The discharge was preceded by no pain. The first thing the patient discovered was the discharge running from the ear. In this case we would suspect tuberculosis and a most careful examination would be made with that in view.

We have now covered the history of the case and we are prepared for the direct physical examination. We note the amount of the discharge, its color, its odor, its consistency, its constancy or its periodicity. We now undertake to determine whether there is a primary focus that is feeding the infection. We examine the nostrils for discharge for the state of the mucous membrane and for obstruction. We transilluminate the sinuses. Comparatively often we find cloudiness on the same side as the purulent discharge, oftentimes the sinuses are apparently clear. Do not let this stop you. No examination is complete without a careful X-ray of the sinuses by a thoroughly competent man. At the same time that the sinuses are X-rayed there should be a careful roentgenogram of both mastoid processes. This may show an area of necrosis either single or multiple. It may show a type of mastoid so aptly termed by Mr. Arthur Cheatle, the infantile type, showing no cells in the mastoid.

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*Read before the Tennessee Academy of Ophthalmology and Otolaryngology, Knoxville, April 12, 1937.

For the sake of brevity I assume that where it is indicated the internist and the laboratory technician have been summoned to our aid. We are now prepared to launch the attack. If we find infected sinuses our first duty is to deal properly and efficiently with them. Many men have different ways of dealing with this problem and I will not here undertake to enter this controversial field further than to state that when it comes to a case of chronic infection in the sinuses I am more of a surgeon than I am a topical application man. I have had a long experience in the treatment of chronic sinus infection and on the whole it has been unsatisfactory. I have had a long experience in the surgical drainage of chronic sinus infection and on the whole it has been satisfactory. Faced with a chronic sinus infection complicated by a chronic discharging ear I would not be inclined to spend a great deal of time trying to clear up the sinuses by treatment. Unless there was marked improvement of a character which gave promise of being permanent I would wish to proceed to surgical drainage. I have the feeling that it is a waste of time to continue to treat a chronic discharging ear in the presence of an unresolved sinus infection. My experience has been that after the sinuses are cleared up the chronic purulent infection of the middle ear will clear up spontaneously. Suppose we find that the patient has both an infected sinus and also a chronic mastoiditis? Here I would be inclined to spend very little time in treatment. A chronic mastoid infection is like a chronic sinus infection. About the only thing that favorably influences a chronic mastoiditis is the eradication of broken-down cells. Which should be attacked first, the sinus or the mastoid? As I regard a mastoid as a more potential menace to the life of the patient it is my policy to clean out the mastoid first. I would not delay draining the sinuses any longer than it takes the patient to recover from the shock of the mastoid operation.

We have now outlined the treatment of chronic purulent otitis where it is a complication of infected sinuses and infected mastoid cells. What is our line of procedure where we find neither infected sinuses nor infected mastoid cells? In this case we are dealing with a condition that offers very little menace to life and health. Therefore we can afford to take our time and give the patient the full benefit of local treatment. Almost all these cases will respond to careful, persistent attention. These are the cases that have responded to zinc ionization. My feeling is that they will respond equally well to other forms of treatment.

During a long professional life I have seen many different types of treatment advocated. I still believe that in the presence of a chronic discharging ear which is not a complication of sinus or mastoid infection the first essential to healing is cleanliness and the most important aid to cleanliness is the universal solvent water. I syringe the ear with a warm boric or saline solution and then spend a long time in getting it dry. After the ear is thoroughly dry I dust in either the iodine powder or campho-phenique. I find in some cases the iodine powder is irritating and the campho-phenique works better. This type of treatment would cure a great many cases that we consider operative cases if the patient and the doctor were equally faithful in the pursuit of the treatment. In my professional experience I have learned as much from patients who refused my advice as from those who have taken it. Sometimes the patient has suffered by refusing my advice and in other cases it is I who have had my eyes opened. I can recall five patients who had a chronic purulent otitis with unmistakable evidence of cholesteatomatous deposits associated with dangerous symptoms. I urged operation, but the patients refused. They all said we are willing to come to your office every day for treatment, but we are not willing to be operated on. They all came faithfully over a long period and received this cleansing treatment. The result was the same in all five cases. One day I would look in the ear and see a mass of black material which would prove to be cholesteatoma. This was removed and there would be more the next day. When the cholesteatomatous masses ceased to appear in the canal the ear quickly dried up and in no case has there been any recurrence. I would not, of course, recommend this as routine treatment because it is too time-consuming and uncertain. There are not many patients who would be faithful enough to see it through. But if the patient refuses a radical operation it is well enough to know that such cases have been cured by treatment.

I have a very definite conviction about the treatment of aural polypi. I think that aural polypi should never be attacked surgically. There is too much danger of lighting up an intracranial infection. For thirty-six years I have dealt with aural polypi in one way and that is by cauterization. The agent used is a saturated solution of potassium bichromate. After the ear is cleansed and dried thoroughly an applicator with a small cotton tip is dipped in the solution and applied to the polypus. A few applications will generally suffice to get rid of the polypi. This will aid drainage and promote healing.

In the foregoing discussion I have indicated my approach to the problem of chronic suppuration of the middle ear and mastoid. It is based on conclusions arrived at after sixteen years of investigation of middle ear and mastoid suppuration. It is with peculiar pleasure that I offer you these conclusions, as it was through this section that I presented my first paper on this subject to the general profession. This paper was read at the Jackson meeting of the Tennessee State Medical Association in April, 1929. My final conclusions are:

First.—At least eighty-five per cent of purulent infection of the middle ear and mastoid are the result of a purulent sinusitis, nearly always on the same side as the infected ear and mastoid.

Second.—Ninety-one per cent of those having scarlet fever have a coincident infection in the sinuses. It is presumed from clinical symptoms that about the same per cent have a coincident sinusitis in epidemic influenza. The chances are that the other exanthematous diseases also have a high percentage of sinusitis.

Third.—If ninety-one per cent of patients ill with scarlet fever and influenza, together with those having sinusitis in the other exanthematous diseases, have infection in the sinuses, then at one time or another practically the entire population suffers from sinus disease.

Fourth.—That a large percentage of those so infected are left with a chronic sinus infection that tends to last throughout life unless diagnosed and treated.

Fifth.—That these chronic residual infections constitute a menace to the life, health and hearing of those so infected and make the victim a carrier infecting others by contact and starting epidemics.

Sixth.—That what is diagnosed as an acute sinus infection is often an acute exacerbation of a chronic sinus infection.

Seventh.—When the relationship is established between a chronic middle ear suppuration and a purulent sinusitis the first step in the treatment of the ear is the elimination of the sinus infection.

No. 1, X-ray Case No. 8107.—J. C., male, age 16. Discharging ear four months following a cold. Gives history of abscess of left ear following swimming. Consulted specialist who advised removal of tonsils and adenoids. Operation had no effect on discharging ear. Mastoid operation. Mastoid did not heal until left antrum was drained, after which mastoid healed quickly. Plate 1: densely cloudy left antrum. Plate 2: cells of the left mastoid broken down.

No. 2, X-ray Case No. 7090.—M. H., male, age 16. Both ears discharging for some time. Lately, pain in left mastoid region. Left mastoid was operated on. The maxillary sinuses were drained a year later, after which the chronic purulent discharge from the right ear ceased. Plate 1: both maxillary sinuses cloudy. Plate 2: involvement of left mastoid cells.

No. 3, X-ray Case No. 17994.—E. T., male, age 17. Gave history of diphtheria at three years old. Since then had chronic purulent discharge from right ear. Large perforation of drum. Very bad color. X-ray by Dr. Shoulders showed very cloudy right antrum, right ethmoid, right sphenoid and right frontal. Has a leaky heart. This case illustrates the chronicity of sinus disease and the connection between purulent sinusitis and purulent otitis media.

No. 4, X-ray Case No. 527.—Mrs. W. P. D., white, age 50. Seen April 23, 1936. Gives history of pneumonia at age of eight, during which left ear began to discharge. Pus ruptured through mastoid bone without operation. Left ear has been discharging ever since. X-ray by Dr. Brown in 1933 showed cloudy left antrum. Radical operation on left antrum at that time by Dr. Wesley Wilkerson. Following recent attack of influenza right ear has been discharging. Right antrum cloudy under transillumination.

No. 5, X-ray Case No. 18811.—Mrs. H. T. A., white, age 53.—First seen by my partner, the late Dr. George W. Hale, on March 3, 1890, for suppuration in right ear which began at the age of two. The following year Dr. Hale did a mastoid on the right side. Has been treated for years for sinusitis by her late brother-in-law, who was an otologist. Scar of old mastoid operation can be seen. Right antrum cloudy under transillumination. Roentgenogram by Dr. Shoulders shows right antrum, right ethmoid, and right frontal very cloudy. Here is a case of sinusitis on which we have data running back fifty-one years and still going strong. It shows the relationship between sinus disease and mastoiditis and it demonstrates forcefully the chronicity of sinus disease.

No. 6, X-ray Case No. 19023-21351.—Miss C. A., white, age 33. Seen on April 22, 1935. Daughter of previous patient. Had pneumonia at age of three, since which time she has had a chronic purulent discharge from left ear. The discharge is intermittent. When she has a cold it lights up and starts discharging. The X-ray report on this case is negative, but when the ear is discharging you can see pus issuing from the region of the natural opening of the antrums. It shows what we have all seen time and again that not every case of sinusitis is demonstrable by the X-ray. This appears to be another case of the mother being a carrier and infecting the daughter.

No. 7, X-ray Case No. 18895-21131.—H. L. M., white, age 6. Seen May 6, 1935. Has had a discharging left ear since infancy. Roentgenogram shows left mastoid cloudy. Both right and left antra very cloudy. But the saddest feature of this case is the roentgenogram of the lung showing the child has bronchiectasis. Both antra drained following which discharge from left ear ceased without treatment. Symptoms of bronchiectasis were ameliorated.

No. 8, X-ray Case No. 21038.—T. C., age 25. First seen on November 23, 1910. Had scarlet fever at eight years of age, since then has had purulent discharge from both ears. Did mastoid on left ear, found antrum filled with cholesteatoma. Refused operation on right ear. Under constant daily treatment cholesteatoma came away in a mass and suppuration ceased. Came October 7, 1935, complaining of arthritis in both arms and shoulders. Keeps him awake at night. Roentgenogram by Dr. Shoulders shows right ethmoid and right antrum very cloudy. Left antrum cloudy. This case shows the relationship between sinusitis and middle ear infection and also shows a chronic sinusitis of more than forty years' duration and still causing constitutional disease.

No. 9.—Miss C. W., age 54. Consulted me January 12, 1923. This is the most instructive case I have ever had. Patient came on account of profuse purulent discharge with very foul odor from both ears, which dated from an attack of influenza in 1918. Very deaf, both antra cloudy. Drained both antra intranasally. Did not see her again until December, 1924, when she returned with orbital abscess over left eye. Diagnosed empyema of left frontal sinus with rupture through floor into orbit. Condition of ears unchanged. Drained orbital abscess through external incision. As soon as acute symptoms subsided exenterated left ethmoid labyrinth and made an opening into frontal intranasally. The surgical nurse said it drained like an empyema of the chest. On January 25, 1925, did a radical external operation on the left frontal. Found the floor of the frontal practically destroyed by necrosis of the bone, and an exposure of the dura as large as a twenty-five-cent piece on the posterior wall. Her recovery was uneventful. I did not see her any more for three months. When she came back the purulent discharge in both ears had cleared up completely. I saw her in July, 1934, and there has never been the slightest return of the purulent discharge from the ears and her hearing has improved markedly.

No. 10, X-ray Case No. 21804.—S. H., age 10. Consulted me August 6, 1936. Had scarlet fever at eight years. Profuse purulent discharge from nostrils and ear during attack. Had an extensive mastoid operation on right ear. Right ear still discharging a bloody purulent discharge. Has a mastoid sinus from which a large amount of bloody pus exudes. Both maxillary sinuses cloudy on transillumination. X-ray by Dr. H. S. Shoulders, who reports both maxillary sinuses cloudy, right more than left. Advised draining maxillary sinuses, but operation declined. This patient was treated three times weekly by packing the nostrils with argyrol tampons. The postnasal space was treated with a solution of iodine in glycerine. After three months sinus in mastoid closed. About a month later discharge from ear ceased. The drum which was practically destroyed has completely reformed so that she has an entirely new drum. Her hearing is greatly improved. She has gained fifteen pounds in weight, her color has become normal. She has become quick and alert and full of vitality.

No. 11, X-ray Case No. 21925.—H. E. K., age 23. Consulted me September 22, 1936. Had diphtheria in childhood since when he has had a purulent discharge from left ear. Last few months drainage has been scanty and he has developed mental symptoms. Has had several convulsions, one very severe. Transillumination shows both antra cloudy. X-ray by Dr. Shoulders shows both antra cloudy, left very cloudy. Right mastoid pneumatic and clear. Left mastoid sclerotic in type with all cells cloudy. Left mastoid operated on and both maxillary sinuses drained. Has entirely recovered his health both mental and physical.

No. 12, X-ray Case No. 21986.—H. N. L. Consulted me October 13, 1936. Has had chronic purulent discharge from right ear for a number of years. Had influenza while in the service in 1918. Afterwards right ear began to discharge. Right ear canal filled with profuse purulent discharge with very bad odor. Has had a great deal of treatment without any effect on the discharge. Took treatment from one specialist regularly for two years, but without effect. Specialist dismissed him and told him not to waste any more time or money on the ear, that it was hopeless. Both maxillary sinuses cloudy on transillumination. X-ray by Dr. Shoulders shows left frontal sinus large and cloudy. Both ethmoids cloudy, both maxillary sinuses very cloudy. Advised drainage of both antra at once to which he agreed. Both maxillary sinuses drained at St. Thomas Hospital, October 15. The right antrum, the one on the side of the discharging ear, contained a great deal of free pus. The mucous membrane of the left maxillary sinus was polypoid. He left the hospital on October 17 and came to the office October 19. There was a little pus in the right ear which was cleansed and campho-phenique insufflated. He came again on Tuesday. The right ear was entirely dry, something that had not been true in years. Since then the ear has remained continuously dry. Note: March 2, 1937, the ear has remained continuously dry. The eardrum which was almost completely destroyed has entirely reformed, so that he has an entirely new eardrum similar to Case 10. His hearing has greatly improved. He has recovered from his rheumatism from which he was badly crippled, both knees being much swollen and very painful. He is now pursuing his business with normal activity.

No. 13, X-ray Case No. 22104.—M. S. C., age 19. Consulted me on December 4, 1936. Had scarlet fever when small child which caused suppuration of both ears. Has had a chronic purulent discharge from both ears ever since. Hearing very much impaired. Both eardrums practically destroyed. Is exceedingly nervous. Catches cold constantly. Transillumination showed both antra cloudy. An X-ray by Dr. Shoulders shows every sinus in her head cloudy, frontals, ethmoids, sphenoids, and antra. Advised that all sinuses be drained. Both antra drained at St. Thomas on December 14, 1936. Antra irrigated twice a week, washing out a quantity of pus from each antrum. After about six weeks purulent discharge from both antra ceased. Health is better, color greatly improved, and nervousness has disappeared. Her hearing has improved. There has been no discharge from the ears since the antra were drained. She has had no colds since.

No. 14, X-ray Case No. 22273.—J. A. C., age 16. Consulted me June 28, 1921. Had scarlet fever in early childhood, which left him a chronic discharging right ear. Had a great deal of treatment, but without effect on the discharge. An X-ray of the mastoid by Dr. Shoulders showed a scleratic type of mastoid with infected broken-down cells. There was no hearing in the ear. Drum practically destroyed. Granulation tissue below. Did a radical mastoid on July 6, 1921, which healed without incident. Patient consulted me on February 10, 1937. Reported that two years ago he had severe arthritis. Transillumination showed both sinuses cloudy. An X-ray by Dr. Shoulders showed both antra distinctly cloudy, right antrum very cloudy, which is the same side on which he had a chronic purulent otitis media and radical mastoid operation. There is a distinct tumor mass in the right antrum probably a large polyp. Here is a case of scarlet fever in early childhood which left the patient with a chronic discharging ear which required a radical mastoid at the age of sixteen. Twenty-seven years after the attack of scarlet fever he developed arthritis. An X-ray showed chronic infected sinuses. This shows the chronic purulent otitis media as secondary to an infected maxillary sinus. It also shows the chronicity of sinus disease following scarlet fever. This is a similar case to X-ray Case No. 21038.

DISCUSSION

DR. C. B. BAUGHMAN (Elizabethton): I appreciate the honor of being selected to discuss Dr. Cullom's paper and only wish that I could do him justice in this discussion.

I have thoroughly enjoyed his paper. It shows that he has given his subject a great deal of thought and study.

It is true that every case of otitis media and mastoiditis is secondary to some other infection. In a great many instances, the sinuses are to blame, while in many others the same condition that causes the sinus infection is responsible for the acute ear, which may eventually become chronic. This is frequently seen in influenza and acute corryza, when the ear is often the first to become infected, or the ear and sinus infection may occur simultaneously.

I admit that I have not made as thorough a study on this subject as Dr. Cullom, but in the majority of my cases the causes, as given me, have been scarlet fever, influenza, measles, and swimming. I do not think we can say these acute ears are caused by sinus disease, but they may be prolonged or become chronic by a co-existent sinus, tonsil, or adenoid infection. The onset of an acute otitis media may be during the course of a chronic sinus infection and with no other apparent cause. These, I think, can definitely be classed as due to a chronic sinus infection, or an acute exacerbation of a chronic infection.

We do find in most instances that chronic otitis is associated with chronic sinusitis, chronically infected tonsils, or an enlarged or infected adenoid that may be partially blocking the Eustachian tube. Very frequently these cases clear up spontaneously following the eradication of the sinus trouble or the removal of infected tonsils, as stated by Dr. Cullom.

I have nothing to say in regard to the chronic mastoiditis except that an operation is necessary to clear up this condition. In some cases a simple mastoidectomy will suffice, while in others, especially those associated with polypi, it is often necessary to do a radical operation.

I am glad he mentioned the swimmer. I have never seen many swimmers and especially divers who did not suffer from chronic sinusitis, and a great many also have chronic otitis media. Whether the ear condition depends upon the sinus condition for its existence, I do not know; it is my belief that it does, but the fact remains that they go hand in hand.

When possible, I believe the sinus infection should be cleared up and the infected tonsils and adenoids removed first, and the ear condition treated locally. If, however, there is a destructive process in the mastoid it should be given consideration. The sinus can wait much longer and is not nearly as dangerous to the life of the patient as the mastoid.

In uncomplicated cases of chronic otitis media, I think almost every case can be helped or cured by local treatment, some, however, are very obstinate and many patients will not continue treatment long enough to get a permanent cure. There are several methods of treatment of this condition, one probably as effective as the other. My preference is the dry treatment, but regardless of the method of treatment the desired results may be obtained, provided the victim and the doctor are patient and persistent enough.

It is very gratifying to the doctor to see one of these recover, and equally as surprising to see the results and the improvement in hearing in some of these cases of chronic otitis media.

DR. H. E. CHRISTENBERY (Knoxville): As usual, Dr. Cullom has given us a most able paper. In fact, he has covered the field so thoroughly that there is but little left for discussion. However, there are some strong conclusions that the essayist has reached, probably through many years of experience and observation, that some of the younger men in the profession, perhaps with more limited experience, could not agree with.

The essayist states "that he believes that the primary focus for middle ear infection is practically always in an infected sinus."

I have not found this to be the case in the majority of my cases. However, it may be that I failed to find the infected sinus. It may be as the essayist states, that the primary focus has temporarily or permanently cleared up before there was an opportunity to examine the case.

As stated by the essayist, the history of these cases is most important. Most frequently, we get a history that the ear trouble followed an attack of influenza, measles, scarlet fever, pneumonia, diphtheria or a cold. My observations are that these are the most common causes of chronic purulent otitis media, but many of them are complicated by sinusitis, tonsils, and adenoids.

I most heartily agree with the essayist that swimming and diving contribute greatly to ear involvement and sinusitis. I have never examined a professional swimmer that did not have a chronic otitis media and sinusitis.

When the cause is determined, the next question is to decide how to handle the case—whether to treat or operate. Most of them have been treated and some operated. There are three general classes of these cases: those who should never be operated, those who should be operated, and those who should be operated only after medical treatment has been given a fair trial.

A nonoperative case or one that will usually clear up under treatment is one where there is a large central opening in the drum, where there is a history of intermittent aural discharge whenever he has a cold. The discharge is mucoid and not pus. In these cases, the seat of the trouble is in the Eustachian tube and nasopharynx. Proper hygiene, local and constitutional treatment will usually clear up these cases.

The operative case is where we have the opening in the periphery of the drum rather than the center. There is a history of repeated attacks of pain and tenderness over the mastoid. Masses of cholesteatomas are present, usually a foul odor to the discharge. Polypi and granulations may or may not be present.

I believe the cases that should never be operated until after treatment has failed are in the majority. It is surprising what can be done for these cases, if we can get the cooperation of the patient and take time and pains to prove the worth of proper treatment.

Dr. Cullom has covered this quite thoroughly. He has handled the subject most ably and has given us some interesting case reports. I appreciate the paper very much and feel honored in having the privilege to discuss it.

THE INCREASING RESPONSIBILITY OF THE PHYSICIAN TO THE INFANT AND SMALL CHILD*

F. THOMAS MITCHELL, M.D.,† Memphis

AS THE KNOWLEDGE of a branch of medicine increases and procedures proven to be useful in the prevention or treatment of conditions seen in that field of practice multiply, the responsibility of the practitioner to his clientele proportionately grows.

This is particularly true in the field of pediatrics, in which great advances are being made, not only in the prevention and treatment of disease, but also in studies relative to growth, metabolism, body mechanics, and other related subjects which include child psychology, behavior problems, the influence of heredity and environment, proper habit formation, the management of the individual child, the examination, care and treatment of children in schools and institutions, and other matter, all of which, if generally applied, would add to the child's comfort and health and give him opportunity to more surely develop into his optimum adulthood.

Today we are particularly concerned with the infant and child up to the age of two. I believe that, particularly at this age, many children are deprived of what is now considered routine care and observation because we, as practitioners, do not apply to them all the knowledge we possess. For the past several years the lay publications have contained innumerable pages on subjects related to the growth and development of children, even to the extent that many parents are quite well informed on the subjects and are therefore disappointed in us who appear to them not ambitious to apply this recently gained knowledge. These facts also increase our responsibility in the practice of this part of medicine.

It is quite properly held that the child's physician should supervise his entire living, particularly during these early years, if the child is to attain his best development and it is to a consideration of this supervision that this paper will be devoted.

It is not amiss, shortly after the child is delivered, to instruct the mother in the importance of regular feedings and the establishment of other habits, and also to remind her that frequent determinations of the baby's weight is the only way to measure the child's progress. At this time also a reminder to call the physician if any disturbing symptoms arise is not improper, since only in this way may the following of meddlesome, and at time harmful, advice be prevented.

Almost invariably the baby who is brought in at eighteen or twenty-four months for some illness, and about whom it is said, "He is a fine baby. He has never seen a doctor before" is underweight, anemic, has rickets, and is still bottle fed and keeps the whole family up half the night.

The selected and supervised diet will then not only suit the baby, but serious gastrointestinal disorders and malnutrition will generally be prevented. Also the physician is being schooled in the art of feeding and soon will be able to recognize the precursors of the severe digestive and metabolic disturbances and thus prevent these disorders in the patient. A failure to gain associated with loss of appetite, perhaps some vomiting, and the passing of the so-called soap stool, will indicate a reduction in the fat in the formula and an intestinal intoxication will be easily prevented and soon the baby will be well and gaining again. Many such illustrations are familiar to us all. These early measures may not be exercised however without close cooperation between the mother and the physician to allow their immediate recognition.

There has been a marked decrease in the mortality rate from infancy to early adult life which has been particularly noted in the first few years and which in a large measure is responsible for the steadily increasing span of life. This improvement is not present, however, in the first month of life and therefore there is a contrast between the death rate in the first thirty days and that seen at a later age.

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*Read before the Tennessee State Medical Association, Knoxville, April 13, 14, 15, 1937.

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The mortality rate during the first year is said to have decreased over one-half in the past twenty-five years, while in the first month it has decreased only one-sixth and it has been reduced even less than this in the first week. In certain localities from forty to fifty per cent of all deaths occurring in the first year are in the first week. Two-thirds of these deaths are attributed to asphyxia, atelectasis, prematurity, or birth injury, while those with congenital defect amounted to less than three per cent. Nearly one-third die from infection.

Any attempt at reduction in the infant mortality rate must attack the problem of the high death rate in the first week of life. Some figures attract attention to the high death rate in certain rural communities and others show that the percentage of deaths among the Negroes in the South is particularly high. The death rate among those prematurely born is attracting much attention and may be reduced by those measures calculated to prolong pregnancy in certain cases, on the one hand, and on the other by the general application of measures recognized to be indispensable in the care of the premature infant.

In Chicago, where recently much work has been done in the care of the premature, the death rate in the first twenty-four hours is shown to be double that found among those delivered at full term. A large factor in the high rate was determined to be lack of ante-partum care. Failure to make Wassermann tests on pregnant women accounted for other deaths. The presence of toxemia, placenta praevia, infections among the mothers, and the improper use of analgesics, anesthetics, and oxytoxics were found to account for part of this death rate. The methods of resuscitation of the newborn were improper in some instances.

One must conclude therefore that in a given case, if premature delivery may not be prevented by caring for the mother, the baby must receive particular attention. He is entitled to a thorough physical examination to determine if any condition exists which needs treatment and then proper measures with regard to maintenance of body temperature, proper feeding, the introduction of enough water, and protection against infection must be instituted. It is well to be reminded that the premature, if not malformed, injured or diseased, will, when he is past the premature stage, result in a perfectly normal child with good prospects for usefulness in the majority of instances.

The great numbers of newborn babies dying from birth injuries, as proven by autopsy findings, should keep us ever on the alert to recognize this condition and schooled in its management so that some lives may be spared and some crippling prevented.

The occasional occurrence of tetany in the newborn and its response to calcium therapy should be familiar to those who deal with the newborn.

In caring for the newborn one must constantly strive to prevent infection and constantly be on the lookout for the evidences of infection, since as the result of this many lives are lost at this period.

In those deprived of breast milk resort must be had to some other form of food. While many milks are used and various sugars from time to time have been added to the list of acceptable ones for infant feeding, the fact remains that almost any infant will do well on a simple milk, water, and sugar mixture suitable to his needs, acceptable to his digestive capacity, and fed in sufficient amounts. The milk is the same, whether it be raw milk, boiled, or a canned product. The sugar the same, whether added at home or put in the can with the milk. Some processes, to be sure, alter this or that constituent in the milk; however the average baby will do well on any mixture which meets the above requirements; his digestive ability being able to accommodate itself to the feeding.

The simple formula has the advantage that any ingredient may be increased or decreased at will, determined by the baby's needs, which may not be said for the already modified milk products on the market in which one can only increase or decrease the strength of the formula in all of its constituents.

The occasional use of acid milk, or protein milk, or of some other milk for the artificially fed is required. The sugars are easily adapted to the baby's need. A little time spent in studying the baby will usually indicate the food best adapted to him and to the circumstances of his surroundings and generally one is recompensed by observing a growing, healthy baby with good habits, good color, firm tissue, and a satisfactory resistance against infection.

It must be borne in mind that at times gastrointestinal upsets depend on some condition in the baby and are not always dependent on improper food. It is, for example, unfortunate to wean a baby from the breast because of the vomiting in a pyloric stenosis.

It has long been recognized that milk alone is not a sufficient diet for the baby after he is past the fourth or fifth month of age. Each one of us has seen milk anemia in a baby who perhaps, long after he is one year old, is carrying a nursing bottle around constantly, getting half soured milk through a nipple which is contaminated with anything within the baby's reach. Weaning should be accomplished by the time he is one year old.

All agree that routinely vitamins A, C, and D should be given, hence the addition of orange juice and cod-liver oil, or other vitamin containing principles, at from the fourth to the sixth week.

At the fourth or fifth month cereals and shortly vegetable soup and vegetables are added to the diet, whether the baby be breast or bottle fed. By the sixth month cooked fruit and gelatin and at the eighth month custards and puddings made with egg are permitted.

Regularity of feeding is still practiced and though the diet be varied and pleasing, the child is taught from the beginning to take its food by schedule. I believe that many cases of anorexia in children a little older have their beginning in the habit of letting little children run around all day with food in their hands.

Early in the second year meats, egg, and ice cream are to be fed. The milk, however, should be boiled until the child is at least two years old.

During illness, of course, the food should be reduced and I think in a baby who is on a formula, the fat in the food should be reduced in the beginning of any illness. However, no child should be starved and particularly in the diarrheal disorders mention should be made of the fact that appropriate and sufficient food is indicated. In times past purgation and at times starvation were too frequently practiced and I am certain you will agree that in the diarrheas we now get much better results by feeding, the introduction of sufficient fluids, and measures otherwise which will build up the resistance and support life until the cause of the diarrhea has been overcome and the patient is again able to carry on his usual digestive and metabolic functions.

The diarrheas usually seen are easily recognized as being due to improper food, a parenteral infection or to an intestinal infection, as, for example, the dysentery group of bacilli. The first is rarely seen in babies whose diets are systematized, while in this section of the country the last type is the most commonly observed in the warmer months of the year.

In the management of the dysenteries it is well to assume that those caring for the patient do not know that the illness is contagious and to warn them to dispose properly of the stools and of the danger of flies. Last summer I observed a family in which five members died with dysentery in twenty-one days.

In bacillary dysentery the diet may be any well regulated one which the child can accommodate and which contains no irritating chemical or mechanical residue which might irritate further an already inflamed intestinal mucosa. My impression of the new so-called "specific diets" in dysentery is that they give no better results in the hands of most observers than the old well-balanced, varied diets do and that the illness as a rule is not appreciably shortened by them. Certainly the food must be of such a character that the baby may easily digest it and of such value that he may be maintained on it.

Sufficient fluids must be introduced to supply his needs, even resorting to hypodermoclysis, intravenous, or intraperitoneal injections when indicated. Not the least to be mentioned is blood, which is often used with marked benefit and I think occasionally is the only lifesaving measure available.

The severe intoxication which accompanies these disorders and which affects the heart, the kidneys, the brain, and other organs has lately attracted much study and makes imperative the constant observation of the patient and repeated physical examinations to determine conditions referable to this cause.

The medicinal treatment is generally symptomatic, no specific existing. In spite of this, if from the beginning, one is careful to allow no harmful food or drug and to maintain the nutrition, the death rate may be greatly reduced.

Not the least part of our responsibility to the child has to do with the specific immunizations. It is my opinion that early in life these should be given, since at times these preventable infections are observed in the very young, certainly long before school age.

Among these is whooping cough, which takes its toll in great numbers among children under two years. While I know that some difference of opinion exists as to the efficacy of the preventative immunization against pertussis and some claim even frequent failures, I have used this measure routinely for upward of four years with almost uniform success, and so I advise the once a week injection for three weeks at the sixth or seventh month.

Three or four months later the child should receive the diphtheria immunization, and this should invariably be checked by the Schick test after four months, notwithstanding I have had mothers tell me they had been advised that the Schick test was not necessary. If the Schick test is positive, the immunization should be repeated; if negative, the child should be vaccinated at this time against smallpox, if this has not been done at the third or fourth month, as some advise.

By the time the baby is two years old, if living in a community where typhoid fever is at all prevalent, it should be protected against this disease. I know that by constant education babies will be brought in at these ages for these immunizations in many instances, and I am certain that much illness and many deaths could be thus prevented.

Another measure in the prevention of illness which it seems to me is too frequently neglected is the failure to properly isolate the child with respiratory infection from the other children in the house or even in the neighborhood. All too often we observe some illness of this type "go through" a family when the strict separation of the first one ill might have spared the others.

Even in tuberculosis at times we are not strict enough and occasionally we see children living in a house with a recognized case of open tuberculosis. The fact remains, however, that children so exposed rarely indeed fail to become infected.

In conclusion then may I say that it becomes the responsibility of those of us who deal with little children to have formulated a well-defined plan for their routine care, their systematic observation, the regulation of their diet, and habits, and their protection against those diseases which are generally prevented by safe procedures. It is our duty to so educate the parents that these procedures may be executed and that even apparently mild disorders will attract the attention they deserve, thus preventing the often serious consequences which may arise from their neglect.

DISCUSSION

DR. JOHN M. LEE (Nashville): Dr. Mitchell has stated that the infant mortality rate has been reduced over one-half in the past twenty-five years. This is largely due to the fact that during this period an increasing number of infants have been under the care of interested doctors who have given them the careful attention that he has outlined in his paper. All of us will agree that the things the speaker has stressed are necessary to the optimum growth and health of the infant, and unless these fundamental principles of child care are duly appreciated and made available to babies, much preventable morbidity and mortality will result.

It did not just happen that many mothers seek today regular medical supervision of their infants and small children. A start had to be made somewhere, and that start was made when some doctor told some mother of the benefits to be obtained by such care. The mother tried it and the plan worked. Other mothers observed the results, were convinced of the value of the plan, and in a growing wave the tide of public approval of modern preventive medicine as applied by many practitioners has grown to the point that many mothers now know that it is easier to prevent many of the troubles of infancy and childhood than to cure them, and they seek out the preventive means.

Every year a large number of mothers are delivered of their first children with no knowledge of the fact that babies may be compared to flowers. A hardy rosebush may be planted and neglected and still it will survive and produce roses of a sort. If that plant has the right cultivation at the proper time, superior roses are produced. In like manner, a vigorous baby may survive most any ordinary care, or lack of it, but if he is given the right kind of attention at the right time, a superior human being develops. And it is the responsibility of the doctor to impress this fact upon the mother as soon as possible after the birth of the baby.

Some of us hesitate to broach to parents the subject of regular medical supervision of children for fear that we may be accused of having selfish motives. But in view of the increased knowledge of preventive pediatrics that some mothers of today have, thanks to the educational activities of various individuals, agencies, and the press, the number that will demand this service is increasing, and unless we make this service readily available ourselves, somebody else will provide it. I feel that it is much better to be misunderstood and even criticized for promoting the prevention of diphtheria than to experience the reproach that comes from seeing a baby strangle to death from membranous croup.

The average mother has many things to learn about the care of her first baby especially. It is impossible to teach her all these things at one conference. Besides, as the baby grows older, the food needs changes and additions, and the proper time for such changes can only be determined by regular weighing and examination. By regular visits to the doctor, not only can the child's food needs be properly prescribed, but very often faulty habits in the day's routine may be detected and correction suggested in order that by practical application of some of the well-known principles of mental hygiene early in life, we may contribute to the development of a normal mental attitude of the child.

This field is perhaps now more neglected than any other in pediatrics and adult medicine as well. However, the greater responsibility lies in the field of pediatrics since in the early years more can be accomplished by prevention than at any other time of life. This very great responsibility must be more adequately met if we are to meet successfully the challenge which each year presents in an ever-increasing number of problem children, juvenile delinquents, and mental cases in adults.

The pediatrician's responsibility to his patient is entirely postnatal. However, he can so direct his efforts that his patient receives the right start in life that makes for a healthy normal parent. The family physician and the obstetrician by their care of parents contribute greatly to the kind of physique with which the infant is endowed. Hence, we may emphasize the possibilities inherent not only in adequate prenatal care of the pregnant mother, but also the possibilities that can exist in preconceptional care. Certainly these factors cannot be disregarded if we are to reduce the high mortality rate that still exists within the first few days of neonatal life.

DR. W. L. RUCKS (Memphis): A paper of the type of Dr. Mitchell's is one in which we could and should include all conditions that occur in infancy and childhood that are preventable and curable.

To go into a detailed discussion of each would require an unlimited amount of time. The people of this nation are becoming child conscious and unless the medical profession, as a group, are aroused from their lethargic state, the government, both national and local, is going to see that the infant death rate is less than the adult death rate.

A committee from the American Academy of Pediatrics composed of the following doctors, Drs. J. A. Hayne, Warren F. Draper, James M. Parrott, Oren Moore, Bayard Carter, L. T. Royster, William Weston, William C. Davidson, have made the following recommendations which I will use to bring out more clearly the preventable and curable diseases:

"Three-fourths of the diseases and conditions which kill 240,000 children annually can be prevented or cured. One-quarter of these deaths are from antenatal and natal preventable causes, one-quarter from postnatal preventable causes, and one-quarter are due to diseases for which specific therapy is available.

"The acute antenatal and natal preventive measures are:

"1. Birth Injuries.
"2. Gonorrheal Ophthalmia.
"3. Prematurity, Stillbirths.
"4. Syphilis.
"5. Death in Early Infancy.

"Postnatal measures:

"1. Complete Physical.
"2. Automobile Accidents.
"3. Dietary Deficiencies.
"4. Milk-Borne Diseases—Typhoid, Brucella Infections.
"5. Diphtheria Immunization.
"6. Dysenteries.
"7. Lye Poisoning.
"8. Malaria.
"9. Rabies.
"10. Smallpox.
"11. Tetanus.
"12. Tuberculosis.

"The conditions which are curable and preventable are:

"1. Appendicitis.
"2. Convulsions.
"3. Diabetes Mellitus.
"4. Diphtheria.
"5. Dysentery (amebic).
"6. Empyema.
"7. Erysipelas.
"8. Hemorrhage Newborn.
"9. Intussusception and Intestinal Obstruction.
"10. Lung Abscess and Atelectasis.
"11. Malaria.
"12. Meningitis.
"13. Parasites (intestinal).
"14. Pellagra.
"15. Pyloric Stenosis.
"16. Rickets, Scurvy, Tetany.
"17. Sinusitis.
"18. Syphilis.
"19. Tuberculosis.
"20. Stomatitis (Vincent's)."

The above conditions are the problems of the medical profession.

We all realize that there are certain people, cults, and quacks that require education and eradications before we will progress very far.

This seems to be an endless chain, but I feel that if the medical profession as a whole in the state will give their complete cooperation and assistance the public will cooperate legally and financially in assisting us to improve their health and living conditions.

DR. OLIVER W. HILL (Knoxville): I am very sorry that Dr. Mitchell by this late hour was prevented from having a better audience, because he has a faculty of simplifying a rather complicated thing and making the care of the young child in the hands of the physician comparatively easy.

The paper should be read at a time when the general practitioner, the man who has ninety per cent of these children in his care, can be reached. I hope they will read it when it is published in the JOURNAL.

I was glad to hear him say one thing, that is to boil all milk until the child is two years old, instead of giving raw milk as advocated by some proprietary food people, which is foolish. Boiling three minutes does not disturb the vitamins, in fact, I think it enhances the digestibility of the milk and destroys the bacteria and the spores.

The management of toxoid for diphtheria and whooping cough he has well presented and his position is well taken, except that I do give my diphtheria first and my whooping cough later because I feel the child can better afford to have whooping cough than he can diphtheria. All told, his paper is one of the most remarkable expositions of feeding in a simplified manner that I have been privileged to hear in many moons and I enjoyed it very much.

DR. F. TOM MITCHELL (closing): Just one word, in which I should like to thank my friends for their most flattering discussion and to say that I believe if one who deals with children will set up in his mind a formulated plan for the care of babies during the first two years, their patients will profit tremendously thereby and their death rate will be decidedly less and the doctor himself would not have suffered either in his prestige or in his income.

We notice how beautiful the average newborn is in regard to nutrition. On the average the newborn is fat and plump and has a good color, yet by the time it reaches school age many are in the nutrition classes, something happens between birth and this time that we might be able to supervise so that the happening would be certainly less frequent.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
Devoted to the Interests of the Medical Profession of Tennessee
Office of Publication, 508 Doctors Bldg., Nashville, Tenn.

Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 15, 1932.

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H. H. SHOULDERS, M.D., Editor and Secretary

JANUARY, 1938

EDITORIAL

THE PROBLEM OF MEDICAL CARE TO CLIENTS OF THE FARM SECURITY ADMINISTRATION

Most people with experience hold to the view that the best aid that can be given people in distress is that form of aid which "helps them to help themselves." This particular principle is being applied at the present time in all the states in the Union by the Federal Farm Security Administration.

During the depression many farm families who had the ability to farm and who were self-sustaining in every respect met reverses, lost their homes and farms, and, in many instances, most all of their resources. It was recognized that these families might recover themselves if given the proper sort of aid.

A policy was determined upon, the principle of which was to grant a loan to each of such families in an amount to be determined upon by the Farm Security Administration after an investigation of all the circumstances.

The policy had not been in effect very long until the need was recognized that these people require medical care and that they will be unable to pay for the medical care until they are on their feet again. Steps have been taken, therefore, to render aid to these families by way of providing means by which they can pay a reasonable amount for the medical care they need.

Dr. R. C. Williams of Washington, D. C., is the medical director for the Farm Security Administration. He is endeavoring to plan this care in such a way as to do no violence to the principles which govern the practice of medicine in the various states.

Dr. Williams approached the officers of the Tennessee State Medical Association with reference to the formulation of some plans and the officers gladly responded to a request for a meeting which resulted in the draft of some plans which the Board of Trustees recommended for adoption by each local society in the state. The plans are embodied in the minutes of the meeting of the Board of Trustees which was held December 19, 1937, and appear below.

THE PLAN OF AGREEMENT

Provision 1.—That the Farm Security Administration make available a sum of money for the medical care of its clients. This sum, ranging from $15 to $50 per year, will depend upon the estimated income of the farmer and his ability to pay, and the amount of medical services which probably will be needed. It is understood that the sum agreed upon shall cover all the medical services provided for in this agreement in one year. The exact amount in each case to be determined by consultation between the doctor and the farmer, using as a basis the economic condition of the farmer as shown by the survey of the Farm Security Administration.

Provision 2.—That these funds be placed in the hands of a trustee in each county, or administrative district, whose duty it will be to pay for medical services within the limitations fixed by this agreement.

Provision 3.—This agreement will be presented to the membership of each local society. Those doctors who are willing to render services to these clients under the terms of this agreement will volunteer to do so, and the officers of the local society will furnish their names to the local administrator. The local administrator in turn will supply a list of such doctors to the clients in the county or district concerned.

Each client is to be advised that he has the liberty of choosing the doctor he will call for medical services.

The client will be advised to call the

doctor of his choice from the list compiled. The doctor will render such services as, in his opinion, are necessary. At the end of each month the doctor will furnish the local administrator an itemized statement of the services rendered and the charge for each item.

The schedule of charges for services to these clients shall be on the basis of the usual charge for similar services rendered people, of moderate means, in the same community.

In the event a question is raised by an administrator, or client, concerning the statement rendered by any doctor, it shall be referred to a committee appointed by the president of a local medical society. The committee shall ascertain the facts concerning the services rendered and charges made. If the recommendations of the committee are not satisfactory the doctor or client may appeal to the Board of Trustees, or to a committee appointed by the board.

Provision 4.—It is understood that the medical services provided for under this agreement shall embrace such services as would be performed by a family physician in the home of the client or in the office of the physician. It is not intended that this plan shall cover hospitalization or major surgical procedures.

In the event that clients make excessive demands on doctors for unnecessary services, such fact shall be reported to the local administrator who will consider this fact in judging the client's eligibility for further benefits of any character from the Farm Security Administration.

Medical Care as a Public Health Function

Under the above title Miss Josephine Roach, assistant secretary of the treasury of the United States, made an address before the American Public Health Association on October 5, 1937.

Medical care, as used in the address, evidently is meant to embrace all forms of medical care.

The pronouncements in this address deserve consideration for several reasons. In the first place, the author is a person in a high government position who may exercise a potent voice in forming the policies of the United States Public Health. In the second place, much of the evidence on which conclusions are based is not, to say the least, dependable.

Some of the statistical data are as follows: "Fifty years ago ninety-four per cent of all mortality from disease was from acute illness, chiefly infections; today seventy-five per cent of all mortality from disease is from chronic illness."

To demonstrate the inaccuracy of this statement one needs only to recall that accurate mortality and morbidity statistics were not available in this country fifty years ago, nor even twenty-five years ago. In many localities they are not accurate today. So, while the statement is offered as an accurate statement of a scientific truth, actually it is an estimate, or assumption, in so far as it relates to causes of deaths fifty years ago.

A number of other statements based on statistical data are made. Some are as follows: "Ten diseases take this toll of three out of four of our deaths." "Listed according to the death rates which they are responsible for, they are: heart disease, cancer, pneumonia and influenza, cerebral hemorrhage, nephritis, tuberculosis, diabetes, diarrhea and enteritis, appendicitis, and syphilis."

"Where do they strike most often and hardest? In the homes of the poor, of that 'one-third of our people, ill-fed, ill-housed, ill-clothed.' That phrase must be amended by adding 'ill-cared for, or not cared for at all in sickness and death.' "

It is not possible to make a complete analysis of all these statements. It must suffice at this time to make brief reference to one or two.

The high death rate among unskilled as compared to skilled workers is evidently meant to convey the idea that if the unskilled workers had the same medical care as the skilled workers the death rate would be the same as among the skilled. Such an assumption is unwarranted. If one will stop and think for just a moment the reason that such an assumption is not true becomes obvious.

If an unskilled worker does not possess the mental and physical ability and energy necessary to become skilled at some job is it reasonable to assume that he will follow diligently the directions given by the best medical advice to be had on earth? Certainly not.

Is it reasonable to assume that a person, without sufficient energy and intelligence to become skilled at some job, would use an increased income so intelligently as to yield a marked reduction in death rate?

The cause, or causes, of the increased mortality among unskilled workers is not to be found solely in the amount of income they receive, nor is it to be found in the nature of the work they perform.

If there were an intelligence test which would yield a dependable answer as to the degree of intelligence an individual possesses, it might give us an explanation. If there were a gauge by which the energy of an individual might be registered that, too, might give a clue.

The intelligence, the physical ability, and the energy of an individual are the factors which have most to do in determining whether his family lives in filth, or in clean surroundings; whether earnings are intelligently spent or not; whether the ordinary rules of hygiene and sanitation are observed. In other words, the same factors or attributes which make for a low earning capacity also make for a high mortality rate independent of the medical care available.

It is a dangerous thing to draw conclusions, which may affect our whole national life, from data which are doubtful and without bringing into consideration all the factors involved.

DEATHS

Dr. A. N. Doyle, Minor Hill; University of Tennessee, Medical Department, Memphis, 1888; aged 71; died December 13, following a short illness with pneumonia.

Dr. W. R. Wallace, Memphis; College of Physicians and Surgeons, Memphis, 1908; aged 58; died December ——.

Dr. Gilbert T. Abernathy, Paris.

Dr. S. John House, Nashville; Rush Medical College, University of Chicago, 1921; aged 45; died December 27, after an illness of several months.

RESOLUTIONS

Lynn Adolphus Carden

Lynn Adolphus Carden, M.D., born in Coffee County, Tennessee, November 10, 1860, died at his home at Pelham, Wednesday, December 22, 1937, at the age of seventy-seven years, one month, and twelve days.

He graduated from the Medical Department of the University of Tennessee in 1891. He practiced medicine for more than fifty years at Pelham.

In the year of 1893 he married Miss Cleo Cook. By this union two children were born, Tressie and Wayne. In the year 1900 he married the second time. This time to Miss Mattie Crouch, and to this union a son was born, Abbott. He was a lifelong member of the Methodist Episcopal Church, South.

He is survived by his widow, two sons, Wayne and Abbott; three brothers, Charley of Hillsboro, Tennessee, A. L. of Terrell, Texas, and R. J. of Fairfield, Alabama; two sisters, Mrs. Sallie Yates of El Paso, Texas, and Mrs. Sudie Neeland of Royse City, Texas; and eleven grandchildren, Carden, Pascal, Kenneth, Dale, and Cleora Wilson; Billie Abbott, Inez, Lynn, Wayne, Jr., Bettie, and Jack Carden.

Funeral services were conducted in the Methodist Episcopal Church, South, at Pelham, Friday, December 24, at 10:00 A.M. The active pallbearers were Carden, Pascal, Kenneth, and Dale Wilson; Robert, Joe, W. D., and James Crouch, grandsons and nephews of the deceased. Honorary pallbearers were B. F. Wilson, Dr. U. B. Bowden, Dr. J. H. Farrar, Dr. D. H. Bryan, H. H. Hargis, H. H. Hamby, J. Q. Brashear, John Gallagher, B. G. Patton, James Payne, D. C. Hawk, Cam Hargis, Alex Gunn, D. W. Howard, George Howard, Bill Simms, and J. D. Wilder.

J. SAM TAYLOR

Once again the angel of death has placed the impress of her signet upon a fellow member of our society. Dr. James Samuel Taylor was born in Campbell County, Tennessee, in the year 1878 and graduated from Tennessee Medical College in 1902. With sorrow we view the vacant chair in our society, with sadness and regret we realize our loss of his able counsel and kindly advice. His genial smile and warm friendly welcome live only as a memory. We join the host of friends and his family with the poet's simple but heartfelt ritual:

"Sleep on, dear friend, and take your rest,
They mourn the most who loved you best."

DR. THOMAS JENNINGS,
DR. J. M. COX,
DR. J. T. HAYES,
Committee.

C. H. JOHNSTON

On April 1, 1937, the Tri-County Medical Society lost one of its most active and valued members in the death of Dr. C. H. Johnston. Dr. Johnston was born in Decatur County, Tennessee, about seventy years ago, received his literary education and training in the public schools of Decatur County, Tennessee, and then entered the Medical Department of Vanderbilt University, where he received his medical degree in 1891. After his graduation and internship, he returned to Henderson County, Tennessee, where he engaged in the practice of his profession until the date of his death, a period of about fifty years.

At various times, he served as president of the Henderson County Medical Society, the Tri-County Medical Society, and the West Tennessee Medical Society, in addition to other offices held in said societies. He was always very active and attended regularly the meetings of all the societies of which he was a member. His ability was recognized by all who knew him.

During the World War, Dr. Johnston was a member of the Local Exemption Board and filled this position of trust with merit and fairness to all. He was thorough and painstaking in his work, a leader in organized medicine, and held in the highest esteem of his fellow members who knew him.

Whereas it is the desire of the Tri-County Medical Society, composed of the Counties of Chester, Decatur, and Henderson, to sponsor and maintain among its members the ties of friendship and regard that strongly exist among men who are drawn together by common interests, sympathetic understanding, and close contact; and

Whereas it is likewise the custom and desire to honor and commemorate the memories of its members who are taken from us by death, and to perpetuate in our hearts those ties that are thereby broken, yet remain unbroken; and

Whereas Dr. C. H. Johnston has been taken from us by the Grim Reaper Death.

Be It Resolved, That the Tri-County Medical Society deeply deplores the passing of our friend, brother, and fellow member from among us; that we honor his memory and express the great sorrow that each member feels for himself in the loss of his friend and for the society at the loss of his loyal support, activity, and wise counsel.

That we extend to the members of his family our sincere sympathy in their sorrow and loss.

Be It Further Resolved, That a copy of these resolutions be sent to his family, a copy placed in the records of this society, and a copy sent to the secretary of the State Medical Association with request for publication.

GEO. A. BRANDON, M.D.,
R. M. CONGER, M.D.,
W. O. BAIRD, M.D.,
Memorial Committee.

NEWS NOTES AND COMMENTS

SAN FRANCISCO AMERICAN MEDICAL ASSOCIATION MEETING, JUNE 13-17, 1938

Members should write today if they contemplate attending the American Medical Association meeting in San Francisco this June and obtain their hotel reservations. See recent issues of the *Journal of the American Medical Association* giving list of San Francisco hotels and rates. Send in your requests to Dr. Frederick C. Warnshuis, 450 Sutter Street, San Francisco, California, giving names of members of your party, type of accommodations desired, rates, date of arrival and departure.

SOCIAL HYGIENE DAY

National Social Hygiene Day, the second observance of which has been set for February 2, 1938, by the American Social Hygiene Association, marks the high point in the year-round effort to gain popular interest and support for the activities of the health authorities and the medical profession in dealing with syphilis and gonorrhea. Interested official and voluntary agencies concentrate their efforts at this time on giving the subject the widest possible publicity by arranging for meetings of interested groups, press stories and comment, appropriate radio broadcasts, and the like.

The first National Social Hygiene Day, February 3, 1937, was an immediate success in accomplishing its purpose; it was marked by hundreds of meetings held throughout the country. More than a thousand newspaper clippings coming from all parts of the country testify to its uniformly favorable press.

"Stamp Out Syphilis—Enemy of Youth" is the slogan for the 1938 Social Hygiene Day meetings. Particular emphasis will be laid on the control of syphilis among the twenty to thirty-year age group, in which more than half of all new infections occur.

Suggestions for meetings and practical community programs may be obtained from the American Social Hygiene Association, 50 West Fiftieth Street, New York City. The association will be glad to supply interested persons and groups with materials, such as exhibits, films, and literature.

Dr. Oliver W. Hill, Knoxville, has been appointed a member of the Council of the Southern Medical Association from Tennessee for a regular council term of five years, the appointment having been announced recently by the president, Dr. J. W. Jervey, of Greenville, South Carolina. Dr. Hill succeeds Dr. Eugene Rosamond, Memphis, who, having served the constitutional limit, was not eligible for reappointment.

CORRECTION

In the December issue of the *Journal* we erroneously reported Dr. O. H. Williams, Savannah, as delegate to the meeting of the Tennessee State Medical Association, which is to be held in April.

Dr. T. J. Stockard, of Lawrenceburg, was selected as delegate and Dr. Paul Wiley, Hohenwald, as alternate.

The directory department of the American Medical Association is calling upon us to supply them with a list of officers of each county medical society.

This list is published each month in the *Journal*, but at this time of year the list is being changed, so we request the officers and members to check the list appearing in this issue and notify us if corrections are to be made.

Dr. W. F. Fyke has again been elected secretary of the Robertson County Medical Society.

We are told that for more than thirty years Dr. Fyke and his father have served in this capacity with the exception of a time when the father and son were vice-president and president.

It would be hard to surpass this record and we are sure that no county can boast of a family more active in their efforts to advance organized medicine.

Dr. Thayer S. Wilson, secretary of the Smith County Medical Society, was the first to send in 1938 dues.

A number of the other counties have had their annual meetings and made reports to this office.

The membership to date, this year, is some better than last year. Of course, a number of the secretaries are delaying until they can make complete reports.

The 1937 membership was the largest since 1928. This increase is due to renewed interest in the work of the societies and to hard work by the secretaries of local societies.

This office is always glad to help in any way possible, but each county is a judge of its own membership and nothing can be done by the state association to solicit membership in county societies.

WOMAN'S AUXILIARY

President--------------------------Mrs. W. T. Black
Memphis
President-elect------------Mrs. H. E. Christenberry
Knoxville
Press and Publicity---------------Mrs. B. F. Byrd
Nashville

Custom has said that this is the season in which it is proper to "turn over a new leaf." Some of us perhaps are resolving to "turn over a new leaf," who have really not used the old one. Let's take stock of ourselves, and as we reflect upon the blessings of the year that has ended, and pause to thank our Heavenly Father for his wonderful love and care, let's pledge ourselves, as we face the new year, to put into it some very definite things. Let's make the year count in every field of activity. If you can have only half the happiness that is mine as I contemplate the privilege of working along with you this year, then 1938 will indeed be a happy New Year for every one of you.

On January 12 the annual meeting of the State Executive Board will be held in Nashville. The president, Mrs. W. T. Black, of Memphis, will preside. The business session will be preceded by a luncheon at Belle Meade Country Club at 12:30 o'clock. Other out-of-town guests will include Mrs. H. E. Christenberry, Mrs. Walter S. Nash, Mrs. Oliver Hill, of Knoxville; Mrs. Edward Clay Mitchell, Mrs. W. T. Braun, Mrs. Edward Thompson, and Mrs. Walter Ruch, of Memphis; and Mrs. Matt Murfree, Mrs. J. A. Scott, Mrs. W. V. Sanford, Mrs. James McCrary, of Murfreesboro. We are looking forward to a delightful and helpful meeting.

Our state convention is just around the corner, and we with home and family ties find it necessary to plan ahead for such pleasure, so begin now to make your plans to be present in Nashville, April 12, 13, and 14. Auxiliary headquarters will be the Hermitage Hotel. It takes months of thought and work to perfect a meeting, and to this end let each of us try to get in some intensive work between now and convention time. Our national president, Mrs. Augustus S. Kech, has accepted an invitation to be present at that time. This will mean a challenge to Tennessee to be working more industriously at the *doing* end of the line. Mrs. Theo Morford serves as convention chairman and we are going to have a great time carrying out plans that are now afoot.

DAVIDSON COUNTY

The Woman's Auxiliary to the Nashville Academy of Medicine and Davidson County Medical Society met Friday, December 3, at the home of Mrs. W. R. Cate on Graybar Lane. Luncheon was served at noon and preceded the business session which was presided over by the president, Mrs. Oscar Nelson. A proposed change in the by-laws was read by Mrs. Frank Fessey and Mrs. B. F. Byrd. The meeting was featured by a musical program which was given by a trio composed of Mrs. Harvill Hite, violinist; Mrs. Carl McMurray, cellist; and Mrs. Bruce P'Pool, pianist. Miss Margaret Johnson gave numbers on the xylophone with Miss Sara Kinzley, pianist, playing the accompaniment. The program closed with the singing of Christmas carols by the membership.

MEDICAL SOCIETIES

Dyer, Lake, and Crockett Counties Medical Society:

The Dyer, Lake, and Crockett Counties Medical Society met in regular monthly session, January 4. Dr. Frank E. Whitacre, assistant professor in obstetrics, University of Chicago, presented a lecture and specially prepared motion picture of "Foetal Birth Injuries." The program was most instructive and attended by many visiting and local nurses. Forty-two physicians attended.

C. L. DENTON, *Secretary.*

Giles County:

The Giles County Medical Society held its annual meeting and banquet on Thursday, December 23, at 6:30 P.M., at the Hotel Richland in Pulaski. At its meeting it elected officers for the year 1938. The new officers are Dr. A. W. Dean, of Pulaski, president; Dr. G. C. Grimes, of Aspen Hill, vice-president; and Dr. J. U. Speer, of Pulaski, secretary-treasurer. Dr. J. B. Wright, of Lynnville, Tennessee, delegate to the Tennessee State Medical Association and Dr. T. F. Booth as alternate-delegate to the Tennessee State Medical Association.

The society had as its guests for the evening Dr. W. A. Bryan, of Nashville, Tennessee; Dr. Geo. Williamson, of Columbia, Tennessee, president of the Tennessee State Medical Association; and the dentists and druggists of Pulaski, Tennessee.

Dr. W. A. Bryan read a very interesting paper on "Surgery of the Stomach" and Dr. Geo. Williamson read a paper on "Some Surgical Conditions of the Abdomen in Infancy and Childhood."

The society adjourned until its next regular meeting date in January, at which time the new officers will be installed.

T. F. BOOTH, *Secretary-Treasurer.*

Greene County:

The Greene County Medical Society met at the Andrew Johnson Clubhouse, Tuesday, December 7, at 6:30 P.M.

Dr. W. T. Mathes presented a paper on "The Acute Abdomen in Infancy and Childhood."

Dr. Hal Henard was elected president; Dr. R. S. Cowles, vice-president; and Dr. I. E. Phillips, secretary and treasurer for the ensuing year.

The following members were present: Drs. H. B. Anderson, M. A. Blanton, L. E. Coolidge, R. B. Gibson, H. W. Fox, Hal Henard, W. T. Mathes, R. S. Cowles, C. B. Laughlin, L. E. Dyer, and I. E. Phillips.

I. E. PHILLIPS, *Secretary.*

Hamilton County Medical Society:

January 13 — "Bilateral Symmetrical Fractures," by Dr. Cecil E. Newell.

"Chest Pathology (X-ray)," by Dr. F. B. Bogart.

The following papers are scheduled to be read:

January 20—"Diseases of Coronary Arteries," by Dr. Carl H. Hartung.

"Advantages and Disadvantages of Cyclopropane Anesthesia," by Dr. E. M. Delay.

January 27—"Otitis Media," by Dr. S. H. Long.

"Meningitis," by Dr. H. D. Long.

February 3—"Nonsurgical Treatment of Gynecological Conditions," by Dr. T. B. Sellers, New Orleans, Louisiana.

February 10—"Ratbite Fever. Report of Case," by Dr. J. B. Fitts.

"Fractures of the Hand," by Dr. Wm. J. Sheridan.

"Cholecystectomy," by Dr. Hiram A. Laws.

Knox County:

December 14—"Arthritis," by Dr. Dan Thomas. Discussed by Drs. Bagwell, Philip Thomas, Carmichael, and R. B. Wood.

December 21—"Ovarian Physiology," by Dr. M. S. Roberts. Discussed by Drs. Dewey Peters, R. G. Waterhouse, and John R. Smoot.

January 4—Officers for 1938 were installed followed by a presidential address by Dr. Henry Clay Long, retiring president.

January 11—A paper by Dr. Joe T. Smith.

Monroe County:

A meeting of the Monroe County Medical Society was held on December 17, 1937. A paper on diseases of the kidneys was given by Dr. W. J. Cameron, of Sweetwater. Interesting cases were presented by all other members of the society.

DAVID M. COWGILL, M.D., *Secretary.*

Sullivan-Johnson Counties:

The Sullivan and Johnson Counties Medical Society met in regular meeting at Hotel Bristol, Bristol, Virginia, on Wednesday, December 1, 1937.

There were twenty-nine members and three visitors present as follows: Drs. M. D. Massengille, F. L. Alloway, J. S. Bachman, Guy C. Richardson, H. W. Bachman, Wm. M. Gammon, Fred M. Duckwall, L. B. Snapp, W. A. Harris, R. T. Childress, W. H. Reed, A. B. English, Paul W. Cox, G. G. Keener, W. J. Murphy, E. O. Depew, M. J. Adams, A. D. Miller, A. J. Edwards, E. H. Hearst, Arthur Hooks, W. B. Payne, D. D. Vance, W. K. Vance, Jr., W. O. Harrison, N. S. Peters, N. H. Coperhaver, and T. R. Bowers. Visitors: Dr. Sam R. McDowell, Dr. Carl Jones, and Dr. L. C. Hassinger.

The minutes of the last meeting were read by the secretary and approved by the society.

Following the reading of the minutes the Executive Committee submitted nominations for the officers for the ensuing year as follows: President, Dr. L. C. Cox, Kingsport; vice-president, Dr. T. R. Bowers, Bristol (Sullivan); Dr. E. Bruce Rhea, Shouns (Johnson); secretary-treasurer, Dr. C. F. M. Schram, Kingsport.

Dr. Rogers introduced his guests, Dr. Carl Jones and Dr. S. C. Hassinger, who discussed our local hospital and plan for securing aid from the Commonwealth Fund of New York for making improvements in the Kings Mountain Memorial Hospital, Bristol.

The next meeting will be in Kingsport, the Executive Committee having adopted the proposal as made by the Kingsport doctors deciding that the society should meet alternately in Bristol and Kingsport.

There being no further business the meeting adjourned

T. R. BOWERS, M.D., *Secretary.*

Sullivan-Johnson Counties:

The Sullivan-Johnson Counties Medical Society met on January 6, 1938. Dr. L. L. Highsmith presented a case of hydrocephalus following a dorsal spina bifida in a child eight months old. He called attention to the excessive growth of this meningocele and to its tenseness. The case was discussed briefly by Dr. W. K. Vance, who gave a very poor prognosis. Dr. Alloway presented a paper and case reports on "Epithelioma of the External Ear." This presentation was briefly discussed by Drs. Keener, Schram, and Reed. Dr. Alloway recommended more careful diagnostic work, and told of the results secured by the use of radium and X-ray.

The next meeting of the Sullivan-Johnson County Medical Society will be held in Bristol on February 2, and Dr. J. Warren White, of Greenville, South Carolina, will deliver a paper on "Experiences with Epiphyseal Arrests" showing lantern slides.

Unicoi County:

The doctors of Unicoi County met on December 13, 1937, for the purpose of forming a permanent organization. The following officers were elected: President, Dr. H. L. Monroe; vice-president, Dr. R. H. Harvey; secretary-treasurer, Dr. J. J. Wright.

Washington County:

A meeting of the Washington County Medical Society was held at Johnson City on January 6, 1938. Dr. T. P. McKee presented a paper on "Ocular Manifestations of Other Diseases." Discussed by Drs. Brading and Jones. Dr. E. T. West presented a paper. Discussed by Drs. Budd and Hankins.

CARROLL H. LONG, M.D., *Secretary.*

LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

President—Dr. Geo. C. Williamson, Columbia.
Vice-President for West Tennessee—Dr. F. K. West, Rossville.
Vice-President for Middle Tennessee—Dr. Jack Witherspoon, Nashville.
Vice-President for East Tennessee—Dr. Andrew Smith, Knoxville.
Secretary-Editor—Dr. H. H. Shoulders.
Assistant Secretary-Editor—Dr. W. M. Hardy.

TRUSTEES

Chairman and Treasurer—Dr. C. M. Hamilton, Doctors Building, Nashville.
Dr. A. F. Cooper, Goodwyn Institute Building, Memphis.
Dr. E. R. Zemp, Walnut Street, Knoxville.
Dr. Franklin B. Bogart, Medical Arts Building, Chattanooga.
Dr. W. L. Williamson, 915 Madison Ave., Memphis.

COUNCILORS

First District—Dr. L. E. Dyer, Greeneville.
Second District—Dr. S. R. Miller, Knoxville.
Third District—Dr. Hiram A. Laws, Jr., Chattanooga.
Fourth District—Dr. J. T. Moore, Algood.
Fifth District—Dr. John W. Sutton, Petersburg.
Sixth District—Dr. H. S. Shoulders, Nashville.
Seventh District—Dr. C. D. Walton, Mt. Pleasant.
Eighth District—Dr. J. R. Thompson, Jackson.
Ninth District—Dr. E. H. Baird, Dyersburg.
Tenth District—Dr. W. B. Burns, Memphis.
Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

Delegates to the American Medical Association—
Dr. E. G. Wood, Knoxville; East Tennessee.
Dr. H. H. Shoulders, Nashville; Middle Tennessee.
Dr. H. B. Everett, Memphis; West Tennessee.

Alternates—
Dr. E. T. Newell, Chattanooga; East Tennessee.
Dr. J. O. Manier, Nashville; Middle Tennessee.
Dr. E. C. Ellett, Memphis; West Tennessee.

OFFICERS OF COUNTY MEDICAL SOCIETIES

The following counties have reported elections of their 1938 officers. Undoubtedly other counties have held elections but no reports have been received.

We feel sure that the secretaries of county societies who fail to see their county listed below will immediately send us a list of officers for the coming year.

County	President	Vice President	Secretary-Treasurer
Anderson	O. F. Ballou, Clinton	Geo. W. Kelly, Clinton	J. S. Hall, Clinton
Bedford			W. H. Avery, Shelbyville
Carter	A. R. Collins, Watauga Valley	H. P. Damron, Elizabethton	E. T. Pearson, Elizabethton
Davidson	W. B. Anderson, Nashville	M. S. Lewis, Nashville	J. P. Gilbert, Nashville
Dyer, Lake, Crockett	J. O. McKinney, Friendship	J. E. Frazier, Newburn (Dyer) J. P. Moon, Tiptonville (Lake) W. H. Stallings, Friendship (Crockett)	C. L. Denton, Dyersburg
Franklin	Geo. F. Bogart, Sherwood	Henry T. Kirby-Smith, Winchester	John M. Hardy, Sewanee
Giles	A. W. Deane, Pulaski	G. C. Grimes, Aspen Hill	J. U. Speer, Pulaski
Greene	Hal Henard, Greeneville	R. S. Cowles, Greeneville	I. E. Phillips, Greeneville
Hamilton	A. M. Patterson, Chattanooga	S. H. Long, Chattanooga	J. Marsh Frere, Chattanooga
Hardin, Lawrence, Lewis, Perry, Wayne	J. T. Keeton, Clifton	Henry N. Moore, Savannah (Hardin) Leo Harris, Lawrenceburg (Lawrence) Paul Wiley, Hohenwald (Lewis) W. E. Turner, Lobelville (Perry) D. L. Woods, Waynesboro (Wayne)	O. H. Williams, Savannah
Knox	Robt. F. Patterson, Knoxville	R. G. Waterhouse, Knoxville	Jesse C. Hill, Knoxville
Lincoln	R. T. Odom, Fayetteville	W. S. Joplin, Petersburg	R. F. McCown, Fayetteville
Maury	Leon Ward, Mt. Pleasant	H. O. Anderson, Mt. Pleasant	D. B. Andrews, Columbia
McMinn	Boyd McClary, Etowah	C. O. Foree, Athens	D. F. Seay, Englewood
Monroe	R. C. Kimbrough, Madisonville		David M. Cowgill, Madisonville
Polk	Thos. J. Hicks, Copperhill	W. Y. Gilliam, Copperhill	F. O. Geisler, Isabella
Roane	O. H. Coleman	F. A. Neergaard, Harriman	J. C. Fly, Kingston
Robertson	W. P. Stone, Springfield	J. F. Wilkison, Springfield	W. F. Fyke, Springfield
Shelby	J. J. Hobson, President, Memphis J. H. Francis, Pres.-Elect, Memphis	W. C. Colbert, Memphis	A. F. Cooper, Secretary, Memphis E. G. Kelly, Treasurer, Memphis
Smith	A. O. Parker, Brush Creek	W. F. Boze, Carthage	Thayer S. Wilson, Gordonsville
Sullivan, Johnson	L. C. Cox, Kingsport	T. R. Bowers, Bristol (Sullivan) E. Bruce Rhea, Shouns (Johnson)	C. F. M. Schram, Kingsport
Unicoi	H. L. Monroe, Erwin	R. H. Harvey, Erwin	J. J. Wright, Erwin
Washington	H. B. Cupp, Mountain Home	Walter Hankins, Johnson City	Carroll H. Long, Johnson City
White	F. T. Tubb, Sparta		A. F. Richards, Sparta
Wilson	J. S. Campbell, Lebanon	R. N. Buchanan, Jr., Lebanon	R. B. Gaston, Lebanon
Williamson			K. S. Howlett, Franklin

COMMITTEES

The following is a list of the standing committees of the Tennessee State Medical Association provided for in the constitution and by-laws and appointed by the proper authority, together with some special committees appointed under the authority of a resolution by the House of Delegates.

Some of the committees are appointed for a definite period. In such instances the appointment of the committeeman expires with the meeting of the House of Delegates in the year stated opposite his name.

COMMITTEE ON SCIENTIFIC WORK

Dr. H. H. Shoulders, Chairman, Nashville.
Dr. A. F. Cooper, Memphis.
Dr. Frank Harris, Chattanooga.
Dr. A. H. Lancaster, Knoxville.

STATE TUBERCULOSIS COMMITTEE

Dr. W. S. Rude, Chairman, Ridgetop.
Dr. O. N. Bryan, Nashville.
Dr. C. M. Oberschmidt, Memphis.
Dr. J. L. Hamilton, Chattanooga.

HOSPITAL COMMITTEE

Dr. D. R. Pickens, Chairman, Nashville.
Dr. E. H. Baird, Dyersburg.
Dr. E. A. Gilbert, Chattanooga.
Dr. E. G. Wood, Knoxville.
Dr. H. B. Everett, Memphis.
Dr. Lee K. Gibson, Johnson City.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION

Dr. L. W. Edwards, Chairman, Nashville (1939).
Dr. E. W. Cocke, Memphis (1941).
Dr. Battle Malone, Memphis (1940).
Dr. Tom Barry, Knoxville (1938).
Dr. T. R. Ray, Shelbyville (1942).

LIAISON COMMITTEE

Dr. W. C. Dixon, Chairman, Nashville (1941).
Dr. W. P. Wood, Knoxville (1940).
Dr. Hiram A. Laws, Chattanooga (1939).
Dr. Tom Mitchell, Memphis (1938).
Dr. Tom R. Barry, Knoxville (1942).

COMMITTEE ON INSURANCE

Dr. A. F. Cooper, Chairman, Memphis.
Dr. C. M. Hamilton, Nashville.
Dr. S. R. Miller, Knoxville.

COMMITTEE ON MEDICAL DEFENSE

Dr. S. R. Miller, Chairman, Knoxville.
Dr. H. B. Everett, Memphis.
Dr. H. M. Tigert, Nashville.

ADVISORY COMMITTEE TO THE WOMAN'S AUXILIARY

Dr. B. F. Byrd, Chairman, Nashville.
Dr. Oliver Hill, Knoxville.
Dr. Percy Wood, Memphis.

COMMITTEE ON EDUCATION

Dr. J. Marsh Frere, Chairman, Chattanooga (1940).
Dr. R. B. Wood, Knoxville (1938).
Dr. D. W. Smith, Nashville (1940).
Dr. H. B. Gotten, Memphis (1938).
Dr. W. O. Baird, Henderson (1939).
Dr. J. M. Lee, Nashville (1939).

COMMITTEE ON MEMOIRS

Not filled.
Dr. H. Quigg Fletcher, Chattanooga.
Dr. E. L. Ellis, Maryville.
Dr. L. J. Lindsey, Covington.
Dr. B. T. Nolen, Franklin.

COMMITTEE ON MATERNAL WELFARE

Dr. J. R. Reinberger, Chairman, Memphis.
Dr. M. S. Lewis, Nashville.
Dr. H. P. Hewitt, Chattanooga.
Dr. Andrew Smith, Knoxville.
Dr. C. W. Friberg, Johnson City.
Dr. L. C. Harris, Lawrenceburg.
Dr. D. T. Holland, Newbern.
Dr. J. E. Powers, Jackson.

COMMITTEE ON CHILD WELFARE

Dr. W. D. Anderson, Chairman, Chattanooga.
Dr. Oliver Hill, Knoxville.
Dr. Frazier Binns, Nashville.
Dr. W. D. Mims, Memphis.

CANCER COMMITTEE

Dr. Ralph Monger, Chairman, Knoxville.
Dr. S. J. Sullivan, Cleveland.
Dr. Howard King, Nashville.
Dr. H. S. Shoulders, Nashville.
Dr. J. W. McClaran, Jackson.
Dr. Frank Smythe, Memphis.

COMMITTEE ON PHYSICAL THERAPY

Dr. R. W. Billington, Chairman, Nashville.
Dr. A. M. Patterson, Chattanooga.
Dr. Robert Patterson, Knoxville.
Dr. A. H. Meyer, Memphis.
Dr. J. F. Hamilton, Memphis.

COMMITTEE ON POSTGRADUATE INSTRUCTION IN OBSTETRICS

Dr. Jas. R. Reinberger, Chairman, Memphis.
Dr. Franklin B. Bogart, Chattanooga.
Dr. O. W. Hyman, Memphis.
Dr. John M. Lee, Nashville.
Dr. J. O. Manier, Nashville.
Dr. W. L. Williamson, Memphis.
Dr. John B. Youmans, Nashville.

OTHER MEDICAL SOCIETIES

Vanderbilt Medical Society, December 10, 1937

1. Case Report: "Influenza Bacillus Meningitis with Recovery," by Dr. Barney Briggs.

A case of influenzal meningitis in a two-year-old child with recovery is reported. This case was treated by daily transfusions; spinal drainage twice daily, followed by intrathecal influenzal serum mixed with fresh human complement in proportion of two to one; a continuous venoclysis using equal parts of five per cent glucose and normal saline and adding four cubic centimeters of anti-influenzal serum to the drip four times daily; sedatives to keep the child comfortable; and gavage feedings necessitated by extreme listlessness and anorexia of the child. This case was favorable in that treatment was started as early as forty-eight hours after onset, and unfavorable in that the prognosis under three years of age is poor.

The case was discussed by Drs. H. R. Casparis and Katherine Dodd.

2. "Serological Reactions for Syphilis in Blood Transfusion Donors," by Drs. A. E. Keller and W. S. Leathers.

From 1928-1936 a total of 172,277 tests for syphilis were performed in the Vanderbilt University Hospital. Of that number 8.3 per cent were specimens of blood from prospective transfusion donors. Each specimen was tested by both the Kahn precipitation and the complement fixation reaction according to the Kolmer technique. Of the 14,246 specimens examined for donors 88.7 per cent were negative, 9.5 per cent were positive, and 1.8 per cent were doubtful. A plan which makes it possible to notify and follow up donors with positive serologic tests has been introduced as an administrative procedure in the Vanderbilt University Hospital.

The paper was presented by Dr. A. E. Keller and was discussed by Drs. Guerney Clark and W. S. Leathers.

3. "Response Elicitable from Electrical Stimulation of the Cortex Cerebri of Cats in Chronic Experiments Through Implanted Electrodes," by Drs. Sam L. Clark and J. W. Ward.

By inserting a small threaded, stainless steel tube containing a central insulated silver wire into the skull of cats so that the exposed end of the silver wire came in contact with the cortex cerebri, it was possible to stimulate the same spots on the brain at intervals over long periods of time. The experiments demonstrated the constancy of response from single cortical points, and made available a means of producing epileptic attacks in intact animals at will.

The paper was presented by Dr. Sam Clark and was discussed by Dr. Cobb Pilcher.

PUBLIC HEALTH ACTIVITIES IN TENNESSEE

Typhus Fever

The increasing prevalence of endemic typhus fever in some of the southern states and the knowledge that the rat flea is the chief agent of transmission have resulted in the establishment of a three weeks' special course at Macon, Georgia, for the training of public health personnel in rat control and ratproofing methods. A study of case reports reveals that the disease has reached mild epidemic proportions in localized areas in Alabama and Georgia during recent years. While only twenty-one cases were reported in Tennessee during 1937, the possibility of future trouble should not be overlooked. The health officers of Nashville and Memphis took advantage of the special training fellowships made available by the State Health Department and sent one man each to the special training school which began on December 7. The school was conducted by the United States Public Health Service in cooperation with the Georgia Health Department.

The small vial of heated diphtheria toxin for control testing will be omitted from all packages of Schick test material distributed by the State Health Department in the future except when specifically requested by physicians and health officers. Distribution of this material only upon request will result in a substantial annual savings, the Tennessee Health Department reports. Schick test and control test materials are available in packages of twenty and fifty tests to all physicians upon request.

The book "Shadow on the Land," written by Surgeon General Parran of the United States Public Health Service, contains some interesting comment regarding the number of cases of syphilis spread in an East Tennessee county by a CCC enrollee, who was discharged because of having contracted syphilis, but whose treatment before discharge was not sufficient to prevent an infectious relapse. A more recent study carried out by a practicing physician and the health officer of the county or perhaps it should be said that the cumulative study findings reveal a total of twenty-seven cases directly resultant from this one inadequately treated case. Most tragic of all is the finding that three infants were innocent victims.

This case serves to vividly illustrate what may happen in *any* community. It should convince even the most skeptical that syphilis is not cured when the external lesions disappear. *Treat all early cases consistently by the calendar.* No case can be cured with less than one year's continuous treatment.

The Tennessee Health Department reports that triple typhoid vaccine (vaccine containing B. typhosus and B. paratyphosus A. and B.) is again available for distribution when specifically requested by physicians. The toxic reactions which caused the distribution of this product to be discontinued in 1936 have been overcome by a "washing process" which removes the major part of the offending foreign protein from the finished product. The triple vaccine is now available in sixty cubic centimeter bottles only. The monovalent vaccine (B. typhosus only) will be used in filling all requests unless the triple vaccine is *specifically* requested.

ABSTRACTS OF CURRENT LITERATURE

INTERNAL MEDICINE

By R. B. Wood, M.D.
By D. R. Thomas, M.D.
Medical Arts Building, Knoxville

Lesions of the Brain Following Fever Therapy. F. W. Hartman, M.D., Detroit, Michigan. Journal of American Medical Association, December 25, 1937.

In 1935, the literature described the pathologic changes incident to fever therapy. They were: gross changes consisted of engorgement and congestion of blood vessels, degeneration and hemorrhages of the adrenals, hemorrhages in the brain, marked edema and congestion of the lungs, contraction and bloodlessness of the intestine and parenchymatous degeneration of the liver and kidneys microscopically, acute passive congestion of all organs and tissues and cellular degeneration and hemorrhages of varying degree in the adrenals, liver, brain, lungs, and kidneys were visible.

The author was struck by the apparent similarity between the above-described changes and those described by Courville in his monograph, "Asphyxia as a Consequence of Nitrous Oxide Anesthesia," and he attempts to find if histologic examination of brain reveals similar findings and if the physical and biochemical disturbances associated with fever therapy are conducive to anoxemia, and lastly, if anoxemia occurs during fever therapy and to what extent.

Histologic examination of the brain of a patient dying after fever therapy and that of animals autopsied following the production of hyperpyrexia are identical to those of animals dying of cerebral anoxemia produced by ligation of blood vessels, carbon monoxide poisoning, and asphyxia.

From the study the author concludes that constant and severe anoxia is shown by the decreased oxygen saturation of the arterial blood and the low oxygen content of the venous blood in animals after fever therapy. If below sixty-five volumes per cent the animals died. Factors producing anoxia during fever therapy are alkalosis, accelerated blood flow, increased temperatures of the blood, and increased demand for oxygen in the tissues. The pathologic changes resulting from fever therapy are typical of anoxia produced in other ways. Anoxia may be prevented by the administration of oxygen throughout fever therapy, provided respiration and blood pressure are maintained.

OBSTETRICS AND GYNECOLOGY

By Hamilton V. Gayden, M.D.
Suite 234 Doctors Building, Nashville

Experience in the Treatment of Carcinoma of the Fundus of the Uterus, with Five-Year End Results in Forty-Seven Patients. L. C. Scheffey, W. J. Thudium.

Experiences concerning sixty-eight consecutive cases of carcinoma of the fundus are herein related. In each case the diagnosis was substantiated by histological examination.

The following observations were made: In three out of four women the carcinoma developed postmenopausal. The most common and predominating symptom was irregular vaginal bleeding whereas pain and discharge was found to be of minor diagnostic significance. The diagnostic curettage has advantages that outweigh its potentiality for harm.

The results are discussed in detail, but in general they coincide with observations of Healy. The best results, regardless of the type of treatment, were obtained in the low-grade malignancy group. Radiation alone gave the best end results when all groups were considered and was particularly efficacious in the intermediate and high-grade groups. When surgery was employed the results were better when it was combined with radiation.

The ultimate prognosis depends on factors other than the grade of malignancy. (1) Primarily, they are clinical and relate to the age of the patient, physical condition, duration of symptoms, the promptitude of diagnosis, and the extent of the disease. (2) Secondarily, they relate to treatment. "Surgery alone has definite limitations; it should prove more efficacious when combined with radiation. Continued improvement in the application of X-ray and radium therapy makes for the solution of the problem; theoretically ideal, it cannot always be employed to full advantage because of physical contraindications and intolerance to its effect.

"Each patient with carcinoma of the fundus presents an individual problem in treatment and the management depends on a thoughtful evaluation of the factors concerned and for which no 'standardized' plan of therapy can be offered."

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Anesthesia by Sodium Evipan in Ocular Surgery. Zdravko Nizetic. American Journal of Ophthalmology, December, 1937.

Sodium evipan was used as a general anesthetic in 115 ocular operations. Sixty-six of the operations were enucleations, but the remainder included a wide variety of procedures. The anesthesia was very satisfactory in most cases and had the advantage that the anesthetist was out of the way of the operator. There were no serious complications. The technique of administration is as follows: 0.5 gram of allonal is given as a preoperative sedative, using a ten per cent solution of sodium evipan. The drug is injected intravenously at the rate of one cubic centimeter each thirty seconds. After two or three cubic centimeters have been injected the patient is usually asleep. Two or three cubic centimeters additional are injected and after a brief wait the operation may begin. The dosage in this series ranged from two to ten cubic centimeters. Nizetic considers this drug a very valuable one in eye surgery and believes it to be the anesthetic of choice in retinal detachment work.

PEDIATRICS

By John M. Lee, M.D.
Doctors Building, Nashville

The Prevention and Modification of Measles. Charles F. McKhann, M.D., Boston. Journal of American Medical Association, December 18, 1937.

In spite of all public health measures there has been no appreciable decrease in the incidence of measles, but there has been a steady decline in the death rate from this disease. This diminution in deaths from measles may be due to the recognition of the danger to younger children and avoidance of exposure of this age group to infection, isolation of one measles patient from another, reduction of nutritional and deficiency diseases in infants, and cyclic variation in the virus causing measles.

Since there is no dependable specific preventive or therapeutic agent for measles, passive immunization of children after they have been exposed by injecting human immune bodies is the most useful procedure in the prevention or modification of the disease. Antibodies against measles are found in the blood of patients recovered from the disease, the antibody content being greater in those recently convalescent. The injection intramuscularly of four or five cubic centimeters of such convalescent blood serum into nonimmune persons in the first few days after exposure to measles gives temporary immunity and protects against this exposure. If the same injection is given late in the incubation period the patient has a modified form of measles.

Since the protection against the disease from convalescent serum is of short duration, and the attenuated attack may result in permanent immunity, it is desirable that the serum be used in healthy normal children who have been exposed so that modification be induced. In hospitals, schools, and convalescent homes it is probably better to so use convalescent serum that the disease be prevented.

The blood of adults who have had measles in childhood retains antibodies capable of results similar to those of convalescent serum if given in large doses. When so used fifteen cubic centimeters of adult serum or thirty cubic centimeters of adult whole blood is the dose that is recommended.

Infants born to immune mothers are immune to measles during the early months of their lives, the antibodies obviously passing through the placenta. Reasoning from this fact, the author devised an extract from placentas of immune mothers for the prevention and modification of measles. Since the antibodies are in the globulin fraction of the blood and placental tissue, this is the substance that is extracted and gives the extract its name, immune globulin.

This globulin extract given intramuscularly within five days after exposure prevents measles; given between five and nine days after exposure a modified form of measles results; after nine days from exposure little or no effect is noted. In 2,740 cases receiving immune globulin, 64.3 per cent escaped measles, 30.4 per cent had a mild attack, and 5.3 per cent showed no effect of the treatment. More than fifty-seven per cent of these children had no reaction, thirty-six per cent had a reaction at site of injection, and nineteen per cent had a febrile reaction. In about eight per cent of cases moderately severe reactions occurred.

ROENTGENOLOGY

By FRANKLIN B. BOGART, M.D.
Medical Arts Building, Chattanooga

Roentgen Treatment of Infection from Human Bites. R. Manges Smith and Willis F. Manges. American Journal of Roentgenology and Radium Therapy, Vol. 38, No. 5, p. 721.

While injuries resulting from human bites are not unusual, only seventy-five fully recorded cases were found in the literature. Nine cases are reported which were treated with roentgen rays with uniformly good results.

Such injuries commonly involve the dorsum of the hand and are frequently considered trivial by the patient. In fact, the injuries are usually serious. Hospitalization averages from forty-five to fifty-four days.

Treponema Vincenti is commonly found in these wounds, but is not easy to grow in cultures and usually has to be found in direct smears.

X-ray treatments were given to a large area with the following factors: 135 Kv., five ma., four mm., Al filter, distance twelve inches. Dose fifty to 100r. This dose may be given daily (three to five doses) or less frequently if indicated. Relief from pain is usually prompt (six to twenty-four hours). Swelling subsides more slowly. Lymphangitis and lymphadenitis, when present, respond fairly rapidly. The temperature falls by crisis or steeply by lysis. Convalescence lasts ten days to two weeks, which is much shorter than in cases not treated by radiation.

CONCLUSIONS

1. Infections resulting from human bites are apt to be serious.
2. The organisms from such infections is difficult to grow in cultures. It should be sought for in fresh specimens of pus taken from the wound.
3. The infection is hard to clear up because of its nature, the low resistance of the fascia, tendons and bone, and because the entrance wound is small.
4. Convalescence is slow. Average period of hospitalization is from forty-five to fifty-four days.
5. From an analysis of our case, it seems reasonable to assume that the course of the disease is shortened by irradiation. Certainly, the comfort of the patient and the economic saving effected in shortening convalescence justify roentgen therapy.
6. The lesion is treated early in the course of the infection when possible. Chronicity is no contraindication to this form of therapy.
7. The irradiation is superficial, small doses being used. The treatment can be repeated in twenty-four to forty-eight hours if necessary.
8. In this small group of cases, our results have been uniformly good.

SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.
1400 Monroe Avenue, Memphis

Ileocecal Lymphadenitis in Children. Arthur E. Brown, M.B., B.Ch., F.R.A.C.S., Colac, Victoria, Australia. Surgery, Gynecology, and Obstetrics, December, 1937.

This condition is very similar in its symptoms to appendicitis, with which it usually is confused, and the diagnosis is corrected only at operation in the majority of cases. The material for this paper is taken from thirty cases.

The author classifies his patients into two main groups. Group A comprises the more acute type which very closely simulates appendicitis. In this group there is gross edema of the cecal or colonic wall in addition to the glands. A typical case of this group is presented. Group B is made up of the less acute and much more common type. A characteristic case of this type is presented.

The frequency of the occurrence of this condition is shown by the incidence in a group of 159 patients operated upon for symptoms in the lower right abdomen of which 18.9 per cent were proved by operation to have been suffering from acute or subacute ileocecal adenitis. Girls are somewhat more frequently affected than boys. The condition comes on between the ages of three and eighteen years.

Fifty per cent of the cases gave a definite history of previous attacks at intervals of one week up to twelve months. The acute cases showed no sign of remission of symptoms up to the time of operation. In the recurrent cases attacks lasted from ten minutes to two days with gradual subsidence. Bowel disorders seem to play no part in the condition. In only eight cases out of thirty was there vomiting. General symptoms of toxemia preceded the onset in a majority of the cases. The type of pain is not characteristic, being in some cases localized in the right lower quadrant and in others referred to the upper abdomen or of a generalized colicky type. The tenderness is usually somewhere between McBurney's point and the umbilicus. In a majority of the author's thirty cases there was no rigidity. Rarely the gland masses were palpable. The temperature is usually below 100 degrees. The leucocyte count is elevated, but shows nothing characteristic to and in making a diagnosis.

Operative findings reveal that the appendix does not show pathological changes comparable to those in the glands that drain from it. It is usually reported as normal or mildly inflamed. The lower ileum in a few cases was slightly reddened. In two acute cases there was a swelling of the cecum and colon. The peritoneum is not affected, but sometimes there is a small amount of free fluid present. The glands themselves are, when discrete about the size of a French bean, reddish-pink or of a light liver color. They are movable except where they have fused in a conglomerate mass. Microscopic section reveals only a lymphoid concentration of round cells.

Patients with this condition are usually operated upon for appendicitis and this apparently cures them. The author has seen cases with repeated attacks and when finally the appendix is removed the attacks do not occur. An explanation of the mechanism of the pain is that there is a reflex bowel spasm due to stimulation of the sympathetics by the development of inflammatory changes in the glands or ileocecal region of the bowel. Localized tenderness is probably due to distention of the capsules of the glands and surrounding connective tissue.

The portal of entry of the infection seems to be the lower ileum and more particularly the appendix, since complete relief of symptoms is achieved by removal of the appendix. It has been suggested that the adenitis if due to an organism has a selective attraction for lymphoid tissue and that the tonsils are the main originating focus. The author, however, believes the portal of entry is the ileocecal area.

SYPHILOLOGY

By E. G. Clark, M.D.
Tennessee Department of Public Health
Nashville

The Inadequate Treatment of Early Syphilis. Paul D. Rosahn, M.D. American Journal of Medical Science, 193: 534, April, 1937.

Because previous studies of end results of inadequate treatment for early syphilis had been based on patients who returned to clinics because of some ailment, the author studied 409 cases of syphilis treated adequately or inadequately who came to the clinic because of no presenting ailment. His figures for the favorable outcome of inadequately treated early syphilitics are higher (32.8 per cent) than those previously reported (8.7 per cent, Stokes and Drs. Brisay). The highest proportion of satisfactory results (continued negativity of physical examination and lists of blood and spinal fluid one or more years after treatment) was noted in patients beginning treatment in the seronegative primary stage. A significantly higher percentage of satisfactory results was obtained in those patients receiving treatment by the continuous than by the irregular or intermittent methods. Central nervous system syphilis comprised the largest proportion of the relapses. A considerably greater proportion of favorable outcomes will follow an early adequate continuous plan of treatment.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.
By G. A. Williamson, Jr., M.D
Medical Building, Knoxville

Effect of Certain Gynecologic Lesions on the Upper Urinary Tract. H. L. Kretschmer and A. E. Kanter. Journal of American Medical Association, Vol. 109, pp. 1097-1100.

A group of fifty-one nonpregnant women were selected for a complete genitourinary investigation who were suffering with various lesions in the gynecological tract. They had no urinary symptoms and urine findings were normal.

The object was to determine whether changes do occur in the upper urinary tract in association with pelvic lesions; if so, the frequency, and the association with any particular type of pelvic lesion, and if they completely disappear after correcting the pelvic disorder.

No carcinomatous cases were used since they frequently cause ureteral obstruction, and also the chronicity and difficulty of completely relieving it.

A high incidence of changes in the upper urinary tract was found. In the group with fibroids, hydronephrosis or ureteral dilatation, in some cases both, were found in 65.7 per cent, those with ovarian cysts 81.9 per cent, and with prolapse twenty-five per cent.

After surgical correction of the pelvic lesions, a return to normal takes place in 72.5 per cent.

These authors conclude that a thorough investigation of the genitourinary tract should be made on patients with pelvic pathology. Those that do not return to normal after correction of the pelvic disorder should have the proper treatment for the urinary lesion.

BOOK REVIEW

Mental Therapy. Louis S. London. Two Volumes. $12.50.

"Mental Therapy," in two volumes, published by Covici Friede, of New York, is the recording in unvarnished detail of fifty psychopathic cases studied by the Freudian psychoanalytic technique, together with a brief description of some of the major psychoses and psychoneuroses. The greater portion of the two volumes deals with the various sexual perversions treated under the head of paraphiliac neuroses.

The work is offered by the publishers "as an important reference volume for psychologists, neurologists, psychiatrists, and general practitioners, who will find the cases presented of inestimable value to their practice." The reviewer does not see where it is of any particular value or interest to others than psychoanalysts, whether they be psychologists or psychiatrists. Others might be interested in reading it from the standpoint of pornographic or erotic literature.

The publishers' note further states that "the sale of this work, because of its scientific nature, is positively restricted to physicians, lawyers, ministers, educators, and social workers." This smacks of the advertisements and descriptive literature sent out by a well-known press noted for its unexpurgated editions of erotic literature, and various supposedly scientific studies of sexual abnormalities.

J. P. G.

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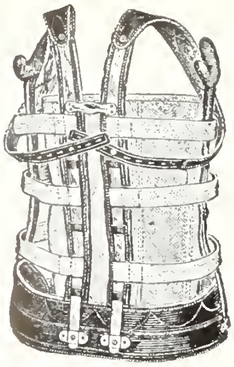

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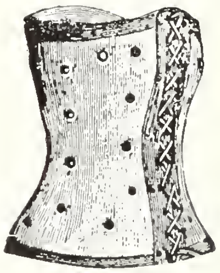

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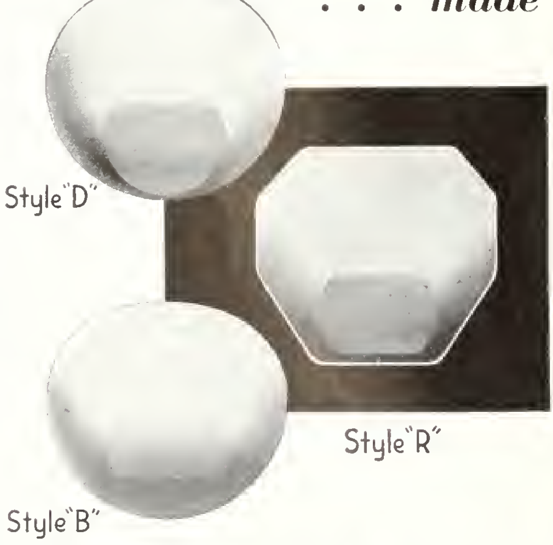

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THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE
ISSUED MONTHLY, Under Direction of the Trustees

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OFFICE OF PUBLICATION, 508 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXXI FEBRUARY, 1938 No. 2

THERAPEUTIC ABORTION: INDICATIONS AND TECHNIQUE*

J. C. AYRES, M.D., F.A.C.S., Memphis

IN ANCIENT times abortion was done without any particular regard to saving the mother's life. It was first used by civilized people to keep down population. Primitive people more often resorted to infanticide for the same purpose. Aristotle advocated a law requiring abortion and even the Republic of Plato authorized it under certain circumstances. Early Greeks used it for contracted pelvis.

The Romans did abortions for licentiousness and poverty and even vanity over disfigurement. The practice was avowed and universal. Under the Mohammedans many abortions were done to avoid the severe punishment for illegitimacy. Josephus says that it was against the Jewish law. The Christians were probably the first to denounce it as murder. According to early canons of the Roman Church, the abortionist, by denying the child baptism, destroyed its soul as well as its body. Towards the fourth century of the Christian era therapeutic abortion was used to save the mother's life, but under the influence and threats of the Roman Church it disappeared (except among the Arabs) from the tenth to the eighteenth century. Early in the eighteenth century the famous German midwife, Justin Siegmundin, used it in placenta praevia. In England, W. Cooper employed it to avoid the high mortality rate of Caesarean section. In 1880, Porro advocated it for hypertrophy of mammae.

Up to 1890, when Duncan recommended it for tuberculosis, the only rational therapeutic indication for the production of abortion was a markedly contracted pelvis. Then followed tuberculosis, heart disease, nephritis, and certain form of psycosis.

In the second edition of his textbook, published in 1905, Edgar lists the following indications for the interruption of pregnancy: hyperemesis gravidarum, eclampsia which does not yield to treatment, severe nephritis, advanced pulmonary or cardiac disease, insanity, and chorea. Also irreducible uterine displacements, such as antiflexion, prolapse, or hernia, or incarceration in pelvis of retroflexed uterus; extreme pelvic contractions, impassable obstruction of birth canal by tumors, either benign or malignant, cicatrices of cervix or vagina, etc.; hemorrhage from placenta praevia, or persistent bleeding from separated normally implanted placenta. Foetal indications he gives as disease of chorion, acute hydramnios, and foetal death.

In order to realize the advance in ten short years let us now note what DeLee says in his second edition, published in 1915:

"Therapeutic abortion is rarely indicated and lately our general therapy has improved so much that few affections justify its performance." If that was true in 1915 how much more rarely should we need to resort to abortion in 1937? Unfortunately, however, there are still a few conditions so aggravated by pregnancy that artificial interruption offers the only hope of saving the mother.

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*Read before the Tennessee State Medical Association, Knoxville, April 13, 14, 15, 1937.

Ralph A. Reis, in Curtis' Obstetrics and Gynecology, uses a long paragraph to emphasize the importance of considering the disease as the primary condition and the pregnancy as the complication instead of the other way around. He intimates that this new viewpoint changes the whole picture and insists that the pregnancy, as a complication, is not of sufficient importance in most cases to require its interruption. He goes on to say that "the majority of women will fare better from a health standpoint if the efforts at therapy are aimed at the primary ailment and not at the interruption of pregnancy."

In a paper read before the Southern Medical Association, in 1930, I reported and analyzed sixty-two answers to a questionnaire sent to seventy obstetricians living in the southern states. They gave their opinions as to the advisability of interrupting pregnancy before the child is viable:

	Yes	*No*
For social reasons to prevent disgrace	10	51
For economic reasons (poverty)	6	56
For health reasons (life not involved)	22	37
To save the mother's life	61	1
In case of rape	36	20
For dominant hereditary taint in both parents	21	34

In a similar poll 880 Hamburg doctors voted as follows:

For other than medical indications	5%
Opposed to economic and social alone	60%
Consider economic and social with medical	75%
Abort girls under sixteen years old	58%
Abort in the presence four or more children	32%
Abort after forty years of age	44%

All of these answers and the opinions expressed above show that the indication for induced abortion in any given case is purely a matter of individual opinion. They place each of these doctors in one of three distinct schools of thought:

1. Those who believe that the embryo's life is of equal or greater value than the mother's.
2. Those who believe that there may be considerations, other than the mother's life, that are relatively more important than the life of the embryo.
3. Those who believe that the embryo is a living human being with definite individual rights and whose life has a value second only to that of the mother.

One obstetrician who answered my questionnaire took the extreme Roman Catholic view that if the mother die *in baptism* her body only dies; but if the unborn child dies *out of baptism* both body and soul are destroyed. According to the canon of the Roman Church the production of therapeutic abortion (even to save the mother's life) is a mortal sin and can be absolved only by the bishop, or a priest especially commissioned by him.

At the present time, according to Dr. Palmer Findlay, Poland has the most liberal abortion law of any civilized country. It allows gynecologists and general practitioners, who have the necessary dexterity, to perform abortion at the request of the patient if health and social condition render it justified. The radical abortion laws of the Soviet Republics have been modified. Reis, Taussic, and others believe that we should extend our abortion therapy to include a good many health-breaking, incapacitating medical conditions. Taussic comes out rather strongly for social-economic indications and is logical and consistent when he says, "Even now, as we all know, medical indications are often loosely established and abortion done merely for the convenience of the patient and the financial gain of the physician. As physicians, we are, however, justified and obligated in trying to persuade our fellow citizens to consider the problem from the broader aspects of preventative medicine, and ask them to take such steps, legal and otherwise, as will make it possible for the conscientious physician to do an abortion, under such circumstances, to preserve the health of the mother and the integrity and well-being of the family."

Most of the teachers of obstetrics are ultraconservative to the extent of limiting the induction of abortion to the saving of the mother's life. Litzenberg goes still further when he says, "The conscientious physician only recognizes impending death and life threatening conditions as warranting deliberate termination of pregnancy before viability." Ralph A. Reis would include dangers to health, as well as life, in his indications. Frederick J. Taussig in his new book on abortion includes rape and even selected social-economic and eugenic conditions as well as a long list of medical indications.

The laws of most civilized countries penalize unlawful abortion, and define "unlawful" as one induced for any other purpose than to save the life of the mother. In Tennessee, unless done to preserve the life of the woman, an abortion, or attempted abortion, is punishable with imprisonment for from one to three years. If the child dies the imprisonment is from one to five years. If the mother dies it's murder.

Edgar says, "For the conscientious physician the interruption of pregnancy naturally involves great responsibility, but when it is the only method of saving the life of the mother, or when without it her life is placed in imminent danger, it is usually regarded as not only justifiable, but imperative." DeLee thinks that in this type of case the induction of abortion is a conservative operation "saving the mother" and not "sacrificing the child," the mother would otherwise become the "coffin" of the child.

Personally, I am inclined to agree with Litzenberg, DeLee, and Edgar. Otherwise, I cannot justify myself in the thought that by therapeutic abortion we save the more precious life rather than allow both to perish. And yet, if I were confronted with conditions mentioned by Taussig I don't know what my decision would be. For instance, those sight-destroying conditions, not directly associated with other evidences of toxemia, like optic neuritis and ablatio retinae, and such mind-destroying conditions as progressing dementia praecox and manic-depressive insanity. As nearly all serious hereditary defects in the human are recessive in character the probability of its showing in posterity is small unless both parents have the same defect. Then it may become dominant. Taussig cites Hessberg's case where the parents are both blind early in life with microphthalmus and amaurosis. Two children had been born blind and the mother was four and one-half months pregnant. Abortion was refused and the third child was later born blind.

For years doctors have realized that certain combinations of disease and pregnancy are incompatible with life and health. Every pregnancy takes its toll and brings a certain amount of risk even to the well woman. That is to be expected; but when one of the vicious combinations occurs something must be done about it or we are in danger of a double tragedy. Of course, the primary effort is aimed at the elimination of the disease, but the zeal with which that objective is pursued depends largely upon the relative value that the individual doctor places upon the life of the unborn child.

In a previous paragraph I mentioned the fact that most diseases are aggravated by gestation and may flare up and become potential indications. On the other hand, there are certain indications that a few years ago were considered absolute that improvement in therapy now relegate to an obsolete position. For instance, in mechanical obstruction of the birth canal by contracted pelves, tumors, adhesions, and scars, Caesarean section, at term, has taken the place of early abortion. Ovarian tumors and myomata, if they do not involve too much of the body of the uterus, are handled by laparotomy. Displacements and incarceration of the uterus in the pelvis can be corrected by bimanual manipulation with, if not without, opening the abdomen. Diabetes can be relieved with insulin and diet; goiter is treated with thyroid extract, iodine, and surgery. Early cancer is treated with radiation and surgery—without considering the child. Advanced hopeless cancer is palliated with the sole idea of saving the child.

Leukemia, pernicious anemia, acute yellow atrophy, and certain other grave conditions are definitely aggravated by pregnancy; but the production of abortion in most instances does more harm than good. Addison's disease also belongs to this group, but it may be that in the suprarenal cortex hormone we have an agent comparable to insulin in diabetes.

Nausea and vomiting and pre-eclamptic symptoms usually respond to treatment, but if they do not the uterus should be emptied without delay. Chorea that develops for the first time during pregnancy is evidence of serious damage to the central nervous system and calls for immediate induction.

Active tuberculosis and certain types of heart and kidney disease are by far the most common indications for therapeutic abortion. Reis quotes Winter as stating that in tuberculosis loss of weight and hemoptysis of moderate degree are not in themselves definite indications; but continuing fever and a sputum positive for tubercle bacilli require interruption. However, a vast majority of investigators believe that pregnancy should not be permitted in the presence of active tuberculosis. All agree that the abortion should be done before the fifth month, if at all.

Mitral stenosis and aortic regurgitation, especially when associated with myocarditis and decompensation, are listed as definite indications for abortion. However, there is some disagreement as to the proper time for the induction and some uncertainty as to its efficacy. Tragic terminations in two or three cases that I have interrupted and happy satisfactory results in a good many (some apparently hopeless) cases carried safely through pregnancy and labor have convinced me that heart disease should be listed as an unusual indication. In the opinion of Levine women suffering from vulvular heart disease, even with slight dyspnea, should be allowed to go through pregnancy unless there is objective evidence of heart failure. "The only objection to this is the presence of permanent auricular fibrillation."

Chronic nephritis with lowered kidney function should be relieved of the burden of pregnancy as soon as diagnosed—without waiting for the inevitable, irreparable damage to other organs. If the sick kidney is embarrassed by the toxins of early pregnancy it will most certainly be overwhelmed by their enormous increase in late pregnancy. For that reason kidney function tests should be made early and the decision as to management made promptly.

The technique of inducing abortion has been so standardized and is so well known that it admits of no particular discussion. If the pregnancy has not advanced beyond the eighth week the uterus is emptied at one sitting. With Goodell graduated dilators the uterus is dilated to admit sponge forceps or a dull spoon curette. It is emptied and packed with iodoform gauze. In twenty-four hours this gauze is removed. Usually any pieces of membrane overlooked will come away with the gauze. If the cervix is hard and unyielding the case is handled just as it would be at four and one-half months, which is as follows: dilate, break up the embryo; lightly pack uterus and cervix; tightly pack vagina. This will usually so soften the cervix that a finger can be introduced and the embryo removed. If it is necessary to sterilize the patient, open the abdomen in the lower mid-line. Do a fundectomy and clean out the uterus. Then tie and turn back the tubes and cover them with layers of peritoneum.

In conclusion I wish to say that I have no quarrel with the conscientious physician whose opinion or practice differs from my own—provided of course that he is influenced only by due consideration of the rights of both mother and child. Such consideration demands that before performing therapeutic abortion he be sure that a continuation of the pregnancy will so aggravate the disease that the mother's life is placed in jeopardy; that the operation will lessen and not add to the risk; and that no other available therapeutic agent will relieve the situation.

DISCUSSION

DR. M. W. SEARIGHT (Memphis): Mr. Chairman and Gentlemen: The whole gamut of medical specialism surely must include the complication of pregnancy in the treatment of various diseases. I think Curtis in his recent textbook has expressed it very aptly when he says that medical conditions in the patient are complicated by pregnancy rather than the disease complicating pregnancy itself.

As to the technic of arriving at a conclusion as to whether in a given case therapeutic abortion should be done, we should allow the man who has been in charge of that case, whether the patient has been suffering with acute mastoiditis, cardio-renal disease, tuberculosis, tight shoes, or dusty roads, and who is most competent to judge as to what drain upon her vital resources is made as a result of the pregnancy to make the decision.

The obstetrical indications are, of course, different. Intractable toxemias, such as hyperemesis, etc., must be decided by the obstetrician himself, but those other things certainly come into the practice of medicine and call for the exercising of the greatest amount of common sense as applied to that individual case.

The wide variance of opinion as to when abortion should be done and when it should not be done has resulted, of course, in that seemingly most necessary adjunct to every community, namely, the criminal abortionist. So whether we want to or not, the question arises constantly whether there are not definite social indications for the performance of legalized or, if you please, therapeutic abortion. When it is brought directly home, we might ask ourselves this question: Suppose this were my daughter or this were my sister coming to me illegitimately pregnant. With our social laws as they are, the resulting permanent disgrace attached to it, there is a question which must be gravely considered in this matter. I will not give you my opinion; I will merely throw the question back in your own laps as to what each individual would do under the circumstances.

As to the technic of criminal abortion, Dr. Ayres has covered it thoroughly. One method that has been seen quite frequently in the literature is, namely, the causation of the death of the fetus by X-ray. From what I can understand (and I have had no experience with it) the results are rather uncertain, but in cases where an anesthetic is definitely contraindicated, it may have its place.

DR. J. C. AYRES (closing): In a paper of this kind of course there are several things that we might have gone into with profit, one of which is the different methods that have been used for the production of abortion, even such things as injecting formalin into the uterus through the abdominal wall, killing the embryo with X-ray, killing the embryo with an electric needle introduced through the cervix. I did not go into any of those because the paper really in its main effort was rather a philosophical discussion of the indications rather than the technic of doing the job.

One or two points I would like to bring out that Dr. Searight hinted at. The man on the job, of course, knows best what to do, but I think that we should always call into consultation a specialist on the particular organ involved. We should call in an internist who has a special leaning toward heart disease if it is a heart condition, or a tuberculosis specialist or a urologist in cases which demand it, to give his opinion not particularly as to whether this abortion should be done, but as to the damage that has been done up to that time. Then if there is any question still, one should call in another obstetrician because the internists do not, as a rule, realize the gravity of the complication of pregnancy to these grave conditions and the result of its continuation.

In closing this discussion I simply want to paraphrase, because I do not know the exact quotation. Someone has quoted Winter as saying that your philosophy should be not one too many abortions nor one too few.

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APRIL 12, 13, 14

LYMPHOPATHIA VENEREUM*

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IN RECENT years a number of isolated clinical manifestations have been correlated and recognized as constituting a relatively new entity known as *lymphogranuloma inguinale*, or *lymphopathia venereum*, one of the latest of the group of virus diseases.

"Climatic bubo" was described by Trousseau[1] in 1865 as found among the natives of the Reunion and Maurice Islands. Several French authors suspected malaria to be the cause. Ruge,[2] a ship's surgeon on a German man-of-war stationed at Zanzibar, described in 1896 a number of cases of climatic bubo and called attention to the lack of chancroid, gonorrhea, and syphilis, and so was at a loss to account for the disease.

A report, which curiously was lost sight of, appeared by Klotz[3] in 1890. During a ten-year-period in New York City he saw 120 cases of what he called "strumous bubo." He noted urethritis, genital herpetiform lesions, ulcers, and papules, and accurately described the systemic and local manifestations of the disease. Also the pathology was studied. While doing an adenectomy, Klotz punctured his finger and developed the clinical picture with axillary bubo.

Durand, Nicolas, and Favre[4] described the local genital lesions, bubo, and its pathology in 1913. Bacteriological studies by culture and animal inoculation were negative. Its coincidence with syphilis and gonorrhea were noted, and they spoke of it as a venereal disease. Darre and Dumas[5] reported in 1921 the successful transmission of the infecting agent to the rabbit's eye with production of a purulent panophthalmitis, the eye cultures however being sterile.

In 1925 Frei[6] described the specific skin test and noted its apparent specificity for the disease. Three years later he[7] published the finding of positive tests in elephantiasis of the vulva and in rectal stricture.

Levaditi and associates[8] and Hellerstrom and Wassan[9] in 1931 independently reported the successful intracerebral inoculation of the infectious agent in monkeys.

In 1932, Findlay[10] showed climatic bubo, developed by sailors in the tropics, to be a virus disease, and described the meningoencephalitis produced in mice and monkeys by intracerebral inoculation of infectious material from buboes. He demonstrated the identity of climatic bubo and lymphopathia venereum by experiments in which serum from one type of patient protected against successful animal inoculation with infectious material from the other type and vice versa. Von Haam[11] reported the successful passage of the virus through as many as seventeen successive animals, in 1935, with maintenance of virulence and ability to produce the Frei test.

Levaditi, Malloret, and Reinie[12] in 1935 inoculated two paretics and produced the disease with material obtained from a colon stricture at operation, in a patient who had a positive Frei test. Von Haam and D'Aunoy,[13] 1936, demonstrated the systemic invasion by the virus. Spinal fluid from eight cases in the acute stage was inoculated into mice. Two of the eight fluids produced the typical meningoencephalitis, and one was carried through fourteen animal passages, at the end of which time the mouse brain gave a good positive Frei test.

PATHOLOGY

The pathological findings were first described by Durand, Nicolas, and Favre[4] and have been confirmed by numerous authors since then.

Grossly, the regional lymph nodes are at first red and hemorrhagic. Later they form masses with periglandular exudation. On section they are honeycombed with miliary abscesses, often of stellate arrangement. Microscopically there are areas of necrosis, granulation tissue, occasional giant cells, leucocytes, lymphocytes, and plasma cells. Epithelioid cells are palisaded about the abscesses, and this is accepted as being very characteristic.

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*Read at the Nashville Academy of Medicine, October 5, 1937.

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CLINICAL PICTURE

Lymphopathia venereum must be thought of as "a systemic disease with its major manifestations localized to the genital regions and with certain late complications." The overwhelming majority of the patients are Negroes. This fact is probably related to lack of cleanliness and the frequency of sexual promiscuity. It was found that 17.4 per cent of 1,469 Negro patients coming to Charity Hospital, New Orleans, for varying medical and surgical conditions gave a positive Frei test.

The clinical features may be classified as (1) primary lesion, (2) satellite bubo, (3) systemic manifestations, (4) proctitis, and (5) complications or sequelae.

Primary Lesion.—In males this has been reported in as high as fifty per cent in some series. The lesion may appear on the prepuce or glans as an erosion, ulcerated nodule, or papular lesion. Urethritis may be the initial evidence of infection. Few primary lesions are seen in the female since probably most of them occur in the genital passages. However, ulceration about the clitoris, urethra, and posterior fourchette have been described, as well as urethritis. The primary lesion appears in three to twenty days after exposure, most often in three to ten. It heals spontaneously in five to ten days.

Adenitis.—The inguinal bubo appears in ten to thirty days after sexual exposure. It is seen in the male in practically all cases, and in the female if the primary was about the external genitalia because of the lymph drainage.

The medial inguinal nodes are first involved, the inflammation then spreading to other nodes. Swelling progresses, pain and tenderness become prominent. The overlying skin becomes red and is adherent to the glands, later the color is dusky purple. Finally, at about five or six weeks, softening usually occurs, and spontaneous drainage of thick, creamy pus takes place through multiple fistulae. Later the discharge may be serosanguinous. Infection, aggravated by secondary invaders, may persist for some months, then healing takes place with fibrosis and scarring. Less commonly resolution may take place in the bubo without the formation of pus.

Systemic Manifestations.—A few days before the adenitis appears there may be evidence of systemic invasion by the virus. Fever of from one to three degrees may be present. Anorexia and general malaise may be prominent. Arthralgias, backache, and headache occur. Urticaria and erythema nodosum have been reported. The systemic symptoms are usually short-lived, being of only several days' duration. Leucocytosis of moderate grade is usual. Increase in spinal fluid pressure and cells have been noted.

Proctitis.—In the female, if the primary lesion is in the vagina or at the posterior fourchette, lymph drainage is such that the perirectal, deep iliac, or sacral nodes are involved rather than the inguinal. The rectum then shows an annular submucosal infiltration, and the mucosa is red with pinpoint ulcers which may coalesce. Bloody or mucopurulent material is usually present in the stool.

Complications or End Results.—These usually result from impairment of lymph drainage. The sclerosing fibrosis which follows lymphadenopathy interferes with proper drainage from those regions. Further, there is evidence of persistent infection which may explain complications.

In the male sex few show any untoward aftereffects. Occasionally elephantiasis of the external genitalia may occur following involvement of the inguinal or crural nodes.

The female much more commonly shows the effects of impaired lymph drainage and persistent infection. Thus in cases in which inguinal or crural nodes were infected, elephantiasis of labia and clitoris may follow. With impaired tissue nutrition, plus secondary invaders, chronic ulceration may take place, a condition long known as esthiomene. Until the last editions of gynecological textbooks (1935), nothing could be added to Koch's statement in 1896 on the subject of esthiomene and elephantiasis of the vulva. He wrote, "In the female genitalia, especially prostitutes, chronic elephantiasis and often accompanying ulcerations are found, difficult of treatment, as far as we know not a specific infection, but especially in those having had a purulent process in the inguinal nodes." Further, he pointed out the frequency of associated proctitis, rectal fistulae, and strictures.

More frequent, however, than chronic disease of the vulva is the end result in the female of rectal stricture. Because of the high frequency of coincident syphilis, rectal stricture has been for years considered to be syphilitic. Now it is recognized that syphilis of the rectum probably does not occur. In 1875, Fournier had described rectal disease as being often associated with chronic vulvar lesions, and for years this was called "anorectal syphiloma of Fournier." As a result of the proctitis described above, an annular stricture appears four to six centimeters above the anus. At times fistulae in ano accompany this. Strictures higher in the colon have been described. Constipation, bloody and purulent discharge result from stricture, which is so often ulcerated. Nutritional deficiency may be brought out, suggested by the fact that fourteen per cent of the rectal cases at Charity Hospital had pellagra. Goodman[14] has reported cases of ulcerative colitis in Negresses who had positive Frei tests, with or without rectal disease.

Extragenital Infection. — Such lesions have been described. Primary lesions on fingers, with axillary bubo, have occurred in surgeons and nurses. Mouth and tongue lesions with cervical adenitis have been reported. Proctitis in the male, without inguinal bubo, suggests homosexual practices.

DIAGNOSIS

The microscopic picture in the excised gland or the production of meningoencephalitis in the experimental animal with infectious material is diagnostic. However, from a practical clinical viewpoint, the use of the Frei test is of great importance. This is of the nature of an allergic reaction. Usually allergy has developed within three weeks, but may be delayed to as late as three months. This fact must be recognized if a negative test results in a case with a recent lesion.

The antigen as described by Frei is made from aspirated pus from the intact bubo. This material is diluted with saline and treated by heat. Antigens which have been used by various investigators have consisted of pus from buboes, emulsified extirpated glands, monkey brain (dead from meningoencephalitis), and pooled mouse brain from mice killed one week after intracerebral inoculation of infectious material.

The test is carried out by injecting one-tenth cubic centimeter of antigen intracutaneously. A maximum reaction is reached in thirty-six to forty-eight hours, and consists of a papule at least eight to ten millimeters in diameter, with an area of erythema about it, often of several centimeters in diameter. The reaction may last for days and be followed by a pigmented spot lasting for months.

Time will not permit an analysis of the many papers which have appeared relative to the value and specificity of the Frei test. However, most authors are agreed as to its value, and especially is its worth recognized in that the disease is often present with some other coincident venereal disease. There is more disagreement with respect to the value of the mouse brain antigen as compared to bubo pus than to the value of the Frei test. Some feel that mouse brain antigen is not specific. Its great advantage is that it can be produced commercially.

Grace and Suskind[15] at New York Hospital used ninety-five mouse brain antigens, of which forty-one were commercial. In fifty cases of lymphopathia venereum they did 171 tests, obtaining papules seven to ten millimeters in diameter. In 128 healthy persons, 241 tests were negative. Normal mouse brain gave negative results in patients with the disease. In 424 controls with normal brain, no papules larger than four millimeters were found. They stated the antigen is good up to two years.

Von Haam and D'Aunoy[16] at Charity Hospital did 1,679 Frei tests in 547 patients with clinical lymphopathia venereum. Further, they did tests on 1,469 Negroes admitted to the hospital for other conditions, 197 of whom gave positive reactions. They found the fewest doubtful tests with monkey brain and gland antigens. All their mouse brain antigen tests were controlled by normal mouse brain.

Tamura[17] recently has been using a goat antiserum test which reaches its maximum reaction in twenty minutes.

Lymphopathia venereum may mask or be masked by any of the other venereal diseases from which it must be differentiated. Space permits only the briefest mention of differential points.

Unfortunately the term lymphogranuloma inguinale so closely resembles granuloma inguinale that it has led to a lack of differentiation in the minds of many physicians. Granuloma inguinale or venereum is an entirely different disease entity, characterized by the tendency to extensive and progressive ulceration of the skin, usually in the genital or perineal regions. The tissue may be shown to contain the Donovan bodies, and tartar emetic intravenously successfully combats this disease. The Frei test is of assistance in the differentiation, if necessary, though the clinical features are so different that confusion should rarely result.

Chancroidal ulceration is often multiple, and usually painful, and in these features does not simulate the disease under discussion. The Ducrey bacillus is the etiological agent in chancroid. In view of possible bubo in each of these diseases, the Frei test may be of assistance in differentiation later in the clinical course.

The syphilitic chancre must be diagnosed by the use of the dark field for Treponema pallidum, and later the serological tests. Rare tertiary syphilis of the genitals will usually be accompanied by a positive serology, negative Frei test, unless coincident infection is present, and response to antisyphilitic treatment.

Herpes genitalis may closely simulate the primary lesion of lymphopathia venereum. Suppurating bubo is, however, not a part of the picture, nor is a positive Frei test.

An unexplained urethritis, obviously not due to the gonococcus, may be the primary lesion of lymphopathia venereum. Buboes and positive Frei test later may make the diagnosis.

INCIDENCE

The attention of the profession in this country was first directed to lymphopathia venereum in 1932 by De Wolf and Van Cleve.[18] Since then many papers have appeared on the subject.

Interest in a disease serves to bring to light an unexpected frequency. For example, the diagnosis of lymphogranuloma inguinale had never been made at Charity Hospital, New Orleans, before May, 1934. Within the next two years, in a special clinic to study the disease, 547 cases were seen.[16]

It is difficult to estimate incidence of this disease in the past. Rectal stricture offers a possible index to its frequency. Von Haam[19] found that from 1911 to 1933 (before lymphopathia venereum was recognized) there were records in Charity Hospital of forty cases of elephantiasis of the vulva, and 1,285 cases of rectal stricture, not more than ten per cent of which were post operative or obviously carcinomatous. (During 1934 and 1935, there were 236 admissions of cases of rectal stricture to the wards of Charity Hospital.[20] About twenty-five per cent of these were readmissions. All had positive Frei tests. These were exclusive of the many more who were ambulant and whose condition did not require admission to the hospital.)

A brief study was carried out here to learn something of the incidence of lymphopathia venereum at Vanderbilt University Hospital in the past eleven years. All records of cases of rectal stricture, exclusive of those diagnosed as due to malignancy, trauma, operation, or gonorrhea, were considered. There were eighty-eight cases, of which twenty-two presented some other possible factor such as previous hemor-

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rhoidectomy, perirectal abscess, or laceration at birth, which might have accounted for stricture, though in some these etiological factors were at best questionable.

The important group consisted of sixty-six in whom the diagnoses had been as follows: syphilitic stricture of the rectum in twenty-seven, stricture of benign or unknown cause in twenty-four, inflammatory stricture in four, questionable tuberculosis in one, and lymphogranuloma inguinale with positive Frei test in ten. The latter were diagnosed since the middle of 1936. The outstanding finding pointing to lymphopathia venereum as the probable cause is the fact that, of the sixty-six cases, fifty-three were in colored females. The remainder were divided among eight white females, three colored males, and two white men. Evidence of syphilis occurred in forty-three of the sixty-three cases, an incidence of sixty-three per cent. Fifty-four, or eighty-two per cent, were under the age of forty, when seen at the hospital, indicating the relationship of rectal lymphopathia venereum to the period of sexual activity.

TREATMENT

A quotation from a recent editorial[21] in the *Journal of the American Medical Association* indicates the present status of treatment in this disease. "Opinions with regard to therapy are numerous and conflicting. Since the disease has a considerable tendency to spontaneous healing, the results of treatment must be judged conservatively. Although many drugs have been used in treatment, the results as yet remain uncertain."

The drugs and biologicals which have been used have been many. Tartar emetic (fuadin) has been a favorite and at times seems to give subjective relief, though it does not even approach the specificity it has in granuloma inguinale. Indeed some experienced observers feel its failure in treatment is a differential point in favor of lymphopathia venereum in cases where the diagnosis is in doubt as between these two conditions. Other drugs used have been copper and gold salts, iodides, dyes, and salicylates. Of biologicals there have been recommended typhoid vaccine, tuberculin, and milk. Desensitization by use of the Frei antigen has been attempted by many, with varying results. It has been used intravenously in dosage of two-tenths to five-tenths cubic centimeters as well as intracutaneously. Subjective improvement has been reported by some. Tamura[22] has recommended antilymphogranuloma goat serum.

Surgery applied to the bubo seems to be accepted by many as the best treatment. Though the disease is probably a systemic infection, the local lymph node manifestations are the most important from the viewpoint of incapacity and end results. It is recognized that excision of the bubo may interfere with subsequent lymph drainage, but it is also believed that removal has a favorable influence on the infection of adjacent nodes. Von Haam[20] made the following study at Charity Hospital. He selected cases which had gone too far to expect spontaneous remission. Of eighty-five cases, forty-three had a partial adenectomy which resulted in healing within one month in over fifty per cent of cases. In forty-two incision and drainage was done, which delayed the healing by two to four weeks in the majority of cases. During the study of the eighty-five cases treated surgically, nineteen abortive cases came under observation. They went on to spontaneous remission, and though no suppuration occurred, it usually took four to six weeks for the adenitis to subside. Six months after the study, none of the eighty-five cases treated surgically had developed edema or elephantiasis of the genitalia, although twenty-seven per cent of them had had bilateral lesions.

Treatment of chronic lymphopathia venereum is discouraging. For ulcerative elephantiasis of the vulva, excision of the parts, if the process is not too extensive, seems to be the treatment of choice. In the case of proctitis and rectal stricture, resection of the rectum, sigmoid colon, and adjacent tissues has been done. Repeated dilatation for rectal stricture is more conservative, and eventually colostomy, if necessary, is the treatment to be carried out.

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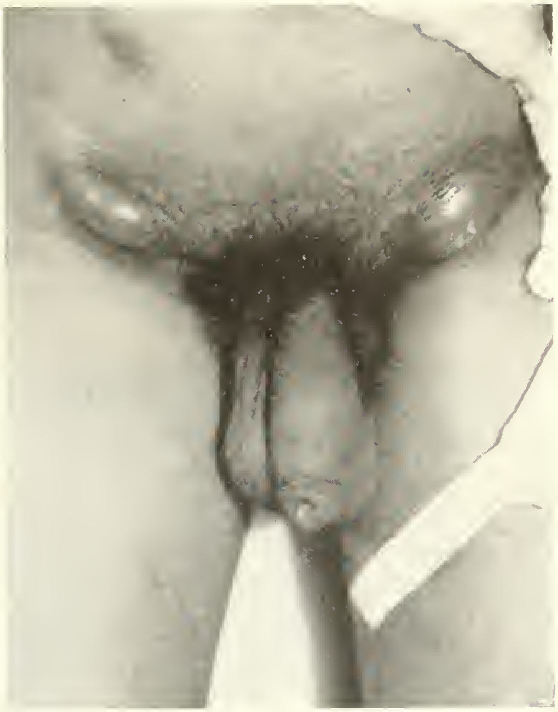

Fig. 1.—Buboes of five weeks' duration in a twenty-six-year-old Negro.

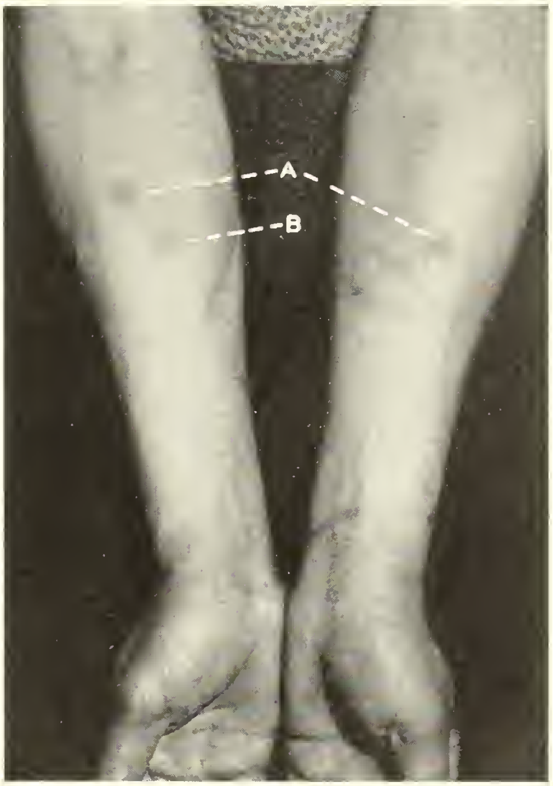

Fig. 2.—At A, positive Frei tests (forty-eight hours). Left arm, autogenous antigen. At B, pigmentation from test eight days before.

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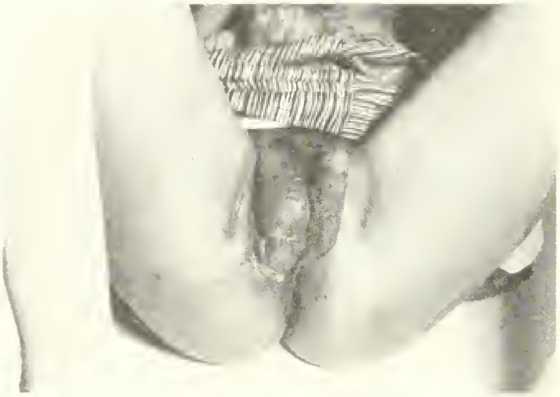

Fig. 3.—Negress, twenty-eight years old. Swelling of vulva with draining sinuses for several years. Rectal stricture for seven years. Positive Frei test, 1936. Coincident latent syphilis treated.

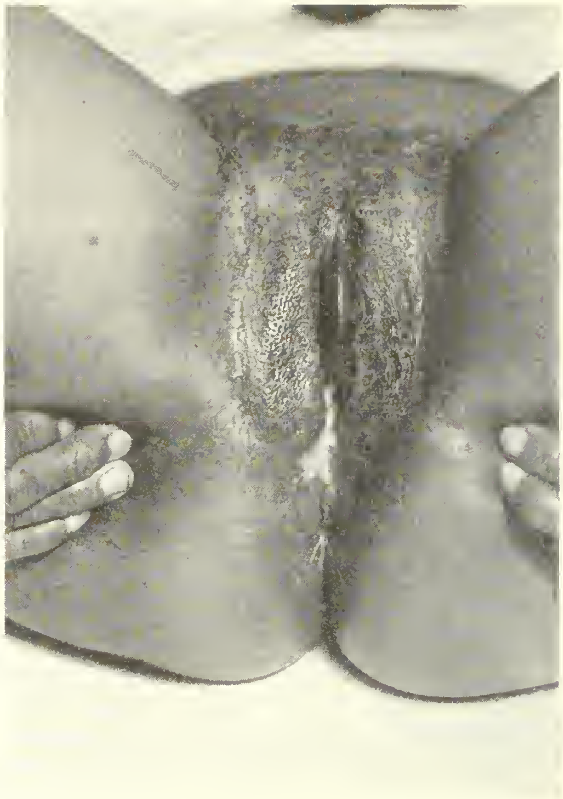

Fig. 4.—Negress, age forty. Treated for syphilis. Chronic ulcer at posterior fourchette, hypertrophy of clitoris, elephantiasis of right labium majus.

THE NOEL HOTEL

Is

HEADQUARTERS

for the 105th Annual Meeting

TENNESSEE STATE MEDICAL ASSOCIATION

Nashville

April 12, 13, 14

MUCOUS COLITIS WITH SPECIAL REFERENCE TO TREATMENT*

F. J. RUNYON, M.D., Clarksville

MUCOUS COLITIS (*Synonyms:* Membranous enteritis, tubular diarrhea, nervous colitis, and mucous colic—the latter being described by some as an independent affection) is frequently one of the most persistent and annoying affections we are called upon to treat. Though rarely indeed fatal it does not tend to spontaneous recovery, but, on the contrary, gradually grows worse under neglect or ill-advised treatment. It is an affection that I believe is frequently either overlooked or its correct nature not apprehended. Really its pathology is not yet understood, there being widely dissenting views as to its aetiology. Some think obstructions the rule in its causation, viz., hemorrhoids, hernia, tumor, affections of the uterus or appendages, enlarged prostate, enteroptosis, etc. Nor is it surprising that some attribute its causation to the much abused liver, an organ apparently deemed by many a fruitful source of almost all diseases. Not a few consider it entirely dependent upon the nervous system, and regard mucous colitis as a secretory neurosis. The marked nervous phenomena usually accompanying the disease lend color to the view. There are others still who hold that hysteria is the cause. Personally, I do not believe that hysteria is ever the cause of it, though it is frequently one manifestation, nor do I believe that the cause is always the same. It is usually, in my opinion, the result of mechanical irritation, irritation resulting from chemical processes in the intestinal canal, or from fermentative processes, the result of germs in the intestinal tract.

The disease is usually characterized by abdominal pains, frequently of a colicky nature, abdominal soreness or tenderness, and the expulsion per rectum of mucus in greater or less amounts—often large quantities being passed at a single stool—which frequently contains casts of the bowel, perhaps a foot or more in length. This mucus may or may not be blood tinged. Constipation is the rule, diarrhea the exception. When constipation exists, frequently hard scybalous masses are passed, each ball looking as if wrapped in thin tissue paper except at the ends, where it appears to have been detached from some other piece. Blood is oftener present when there is diarrhea than when constipation exists.

Usually there are various associated phenomena, such as dyspepsia, abdominal distention, and hysteria, with all its varied manifestations. As a rule, there is marked depression. Indeed, so often is this a symptom that the condition has led me to suspect the disease and inquiry has elicited its existence; for, let me here state, pain is not present in all cases and the passage of mucus may not be mentioned by the patient.

The colicky pain usually precedes the expulsion of the mucus, and following this the bowels are often very sore, this being manifest especially over the caecum, the flexures of the colon, and the sigmoid flexure. The lower part of the small intestine and the rectum are sometimes involved in this affection. When, as a result of a purgative or an enema, the scybalous masses are expelled, there shortly follows a second, or even a third, action, containing a large quantity of mucus—frequently casts many inches in length, and perhaps some blood.

The prognosis is favorable if the disease is correctly treated, but even then the disease may persist for months, and relapses are not infrequent.

Treatment. It is most important in this affection to obtain the confidence and cooperation of the patient, for in many cases suggestion is of great value and should be constantly employed. I desire to lay special stress on this point, as it has proved of great benefit to me. In case I now recall, I often stated to my patient, "Whenever I can get you to believe you are well, you

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*Read before the Middle Tennessee Medical Association at Clarksville, Tennessee, May 22, 1903.

are well." This—*after all local symptoms had apparently disappeared*—repeated, reiterated, suggested and insisted upon by me and by the nurse—finally resulted in the complete relief of a most obstinate case.

If the case is at all severe—if there is present much abdominal pain and soreness, if much mucus is discharged, and especially if this is blood tinged and diarrhea is present—the patient should be put to bed and kept there till acute symptoms at least have subsided. When these have *well* subsided, the patient should be forced to be up and out.

The diet is here of great importance. If constipation is present the diet should preferably be liquid. And here let me state that milk, so universally recommended, I consider one of the very worst articles of food. If constipation is present it favors the formation of scybalous masses and thus the persistence of the disease; for scybalous masses certainly aggravate the condition; or, if diarrhea is present, it predisposes to intestinal fermentation. I prefer beef juice and broths, and these made more nutritious by the addition of bread or some of the cereals and subsequently strained; or powdered beef peptonoids can be added to this. Many of the prepared foods here serve a useful purpose, as malted milk, Mellin's food, etc. Always look well to the nutrition of the patient, but avoid all foods that may mechanically irritate the bowels and all foods that tend to add to the existing constipation. Of course, foods allowed should be of easy digestion. I also allow fruit juices.

On the other hand, when there is diarrhea, I prefer usually rather a dry diet, as beaten biscuit, toasted soda biscuit, or toasted light bread and crackers, rice, etc.; broiled meats *in moderation*, as steak, the thigh of a young chicken, game, etc. Tea in moderation is allowable. After the acute symptoms have subsided in both forms I do not restrict the diet so rigidly, but give my patient a rule to go by something like this: Any food easy of digestion that contains no *coarse substances*, and that is simply prepared, may be taken. This rules out corn bread, oatmeal, tomatoes, etc. I also tell them to avoid pastry, fried dishes, and sweets, and at the same time advise them as to diet according to the condition of the bowels, *i. e.*, constipation or diarrhea. The general hygienic condition should in all cases receive appropriate attention. Cold baths and massage and electricity are now indicated and all are powerful remedies; and it must be remembered that whatever is a power for good *may* be a power for evil, so these should be used with judgment. Electricity is largely of value on account of its mental effect. General tonics, or whatever else tends to improve the general condition of the patient, are of benefit, provided they do not tend to irritate the intestinal tract.

Again, *elimination as a principle* is indicated in almost all of the intestinal affections where irritation is present. If the cause of the colitis is mechanical the canal should (if possible) be kept free from irritants. Hence the formation of the scybalous masses *must* be prevented before a cure can be accomplished. If the cause is due to chemical decomposition and the presence of irritating matter, or to the presence and multiplication of germs, the canal should be swept out and kept as clean as possible. So, practically, the indications are here the same, and to meet this, I have my patient take each morning before breakfast enough Epsom salts to act from one to three times. I have him find his own dose. This tends to remove any of the above-mentioned causes. The so-called liver medicines and all irritating purgatives should be strictly avoided, as the intestinal canal is already greatly irritated and is made still worse by such measures. Long after the patient has recovered, the bowel is still oversensitive, and an irritating purgative will often result in severe tormina and bloody stools.

At night, an hour before retiring, I direct the patient to take, in the recumbent position, an injection of just enough warm normal salt solution to cleanse the bowel. He should not try to retain this, but as soon as sufficient has been injected to cause discomfort the patient should allow it to return. Then, an hour later, I have him inject into the bowel (better through a Wales bougie) an ounce of sweet almond oil containing about five grains of iodoform and ten grains of bismuth subnitrate in an ounce of hot water. If blood is present, I frequently use with advantage fluid hydrastis, and in either event insist that the patient retain the last injection all night. The oil is soothing and helps to overcome the constipation and to prevent the formation of the scybalous masses; or, in case diarrhea is present, by its soothing effect it lessens the number of discharges. Instead of so much almond oil I sometimes use, when diarrhea is present, less of this and add to the mixture mucilage of acacia. I first got the idea of using the oil mixture or the hydrastis from Dr. Mathews, of Louisville. The above treatment, followed with judgment, will cure nearly all cases. Of course, when due to a tumor or to polypoid growths, etc., this will fail, and an operation may be indicated. For the specially obstinate cases, a right colotomy is sometimes done, and I have seen it suggested that the appendix be utilized for the purpose in these obstinate cases of washing out the colon, the point of the syringe being introduced into the appendix, previously exposed and opened for the purpose. The appendix is left exposed and utilized for this as long as it is deemed advisable.

OUTSTANDING GUEST SPEAKERS

Are on the

PROGRAM

of the

105TH ANNUAL MEETING

of the

TENNESSEE STATE MEDICAL ASSOCIATION

NOEL HOTEL

Nashville, April 12, 13, 14

THE TREATMENT OF PYELITIS OF PREGNANCY*

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BEFORE discussing the treatment of such an important subject as urinary tract infection occurring during the period of gestation, a review of the etiology and pathology will be given in order to refresh your memory and emphasize the importance of early diagnosis as well as adequate treatment. The earlier the infection is recognized by prenatal supervision the better is the prognosis for both mother and child.

Pyelitis is one of the most common complications associated with pregnancy. Its frequency of occurrence and its damage to the urinary tract, when neglected, should demand the most earnest attention. Trout found that slightly more than two per cent of pregnant women admitted to the New York Lying-In Hospital were suffering with pyelitis, while Pugh states that upper urinary tract infection occurring during pregnancy is much more common than statistics show, reaching as high as ten per cent. A large percentage of these cases are low grade and go unrecognized. The patient goes to her physician complaining of mild urinary symptoms, such as a sensation of pressure in the region of the bladder, urgency, frequency, dysuria, and nocturia, and too often he assures her that the symptoms of which she complains are merely the discomforts associated with the normal course of pregnancy.

The disease may occur any time, but rarely occurs before the third month. It is more common during the last half of pregnancy, and occasionally occurs during the puerperium. It is seen in primipara and multipara with about the same frequency. Ninety per cent of the cases have the disease on the right side, five per cent on the left, and five per cent are bilateral. There is usually a pyeloureteritis and a cystitis present. In severe prolonged cases, a true pyelonephritis occurs.

In normal gestation there is a general physiological circulatory congestion of all pelvic viscera, with a hyperplasia of the muscularis and connective tissue of the bladder, ureters, and renal pelves. The ureters are elongated and dilated above the brim of the pelvis, and a moderate hydronephrosis is present. There is also dextrorotation of the uterus.

Trout and McLane have demonstrated that there is an atony of the ureters with a diminished amplitude of peristalsis, commencing in the third month and reaching its peak in the eighth month of pregnancy.

These physiological changes of the ureters and renal pelvis occur in eighty per cent of all cases of pregnancy, and are more marked on the right side. They are probably due to both circulating hormones in the blood and pressure from the enlarged uterus. The organs usually return to normal in about two months post partum.

These patients carry a residual urine of from ten to sixty cubic centimeters and in some cases there may be as much as 200 cubic centimeters with a tendency of stasis in the ureters and renal pelves.

The pregnant state, with its urinary stasis, and its physiological changes of the urinary tract bordering on pathology, makes the necessary field to invite infection. The dextrorotation of the uterus causes more obstruction on the right side, while the descending colon and sigmoid act as a cushion and protect the left ureter from marked pressure. With these conditions present, the introduction of bacteria is all that is necessary to cause the disease. The obstruction being greater on the right results in a predominance of the infection on this side. Most women undoubtedly have developed a certain amount of immunity against the common bacterial invaders, otherwise this infection would be much more general.

The relaxation and insufficiency of the ureterovesical valves as described by some do not exist to any marked degree, and play but very little, if any part, in the infection.

About ninety per cent of the cases of pyelitis of pregnancy are due to the bacillus coli. In a few there may be streptococcus or staphylococcus associated with the colon bacillus. The other ten per cent are due to streptococcus, staphylococcus, gonococcus, bacillus proteus, bacillus pyocyaneus, and occasionally to other organisms.

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*Read before the Tennessee State Medical Association, Knoxville, April 13, 14, 15, 1937.

The pathway of the infection into the urinary tract is a controversy. Some feel that it is ascending from bacteria in the lower urinary tract. Others that it is hematogenous, and still others that it is lymphogenic in origin.

It is possible, in a few cases, to obtain a history of previous existing genitourinary infections, but in the majority of cases this cannot be elicited. However, it is a well-known fact that a chronic infection may exist in the urinary tract over a period of years usually unrecognized. Rose and others have gone so far as to state that many of the cases of pyelitis occurring during pregnancy result from chronic pyelitis beginning in childhood. Many cases doubtlessly do have preexisting genitourinary infection such as urethral stricture or urethritis, ureteral stricture or ureteritis, and chronic pyelitis, and the physiological condition of pregnancy resulting in urinary stasis causes a precipitation of acute symptoms. Preexisting pathology is responsible in a few of these cases who fail to properly respond to treatment.

The most plausible routes by which the bacteria enter the kidney in a large majority of these patients are either by the blood stream, or the lymphatic channels, and there are many facts which apparently indicate this. It has been demonstrated that bacterial transfer can occur from the colon to the renal capsule through the lymphatics. Chronic constipation which is common during pregnancy, chronic gall bladder diseases, and appendicitis can easily be responsible for many of these infections. It has also been demonstrated that lower urinary tract infections can be transferred to the kidney by way of the lymphatics. The fact that the colon bacillus habitates these areas and that ninety per cent of these infections are caused by this organism would tend to indicate lymphatic routes. On the other hand, a few of these cases are of streptococcic and staphylococcic origin, which probably have their primary foci about the teeth, tonsils, and nasal sinuses. These are doubtlessly blood borne.

Pyelitis is a dangerous complication of pregnancy when it becomes severe, in that permanent damage to the urinary tract may result. The disease demands the same close observation and attention to treatment as the toxemias of pregnancy.

The onset may be gradual or abrupt. The symptoms vary with the amount of obstruction and the degree of infection present. When drainage is fair the symptoms may not be marked and go unrecognized. In the acute stage there is general malaise, chills, and elevation of temperature. Headache is almost a constant feature. There is usually pain over the involved side which may be dull and aching in character, or severe and agonizing, with soreness over the involved kidney and ureter. The patient runs a septic temperature, has repeated chills, acceleration of the pulse, nausea and vomiting, and usually some abdominal distention. Dysuria, bacteruria, and pyuria are present. The pyuria may be intermittent, depending upon the drainage. The white blood count ranges from 9,000 to 20,000. Anemia, dehydration, and loss of weight occur. The acute symptoms usually subside within a few days to two or three weeks when properly treated, when more prolonged, inadequate drainage and renal pathology should be suspected. In the more severe cases, one should watch for an elevation of blood chemistry.

The disease may occasionally be confused with an acute gall bladder, acute appendicitis, or acute pelvic inflammation, but as a rule the differential diagnoses are clear cut.

The treatment of urinary infection occurring during pregnancy has undergone marked changes in recent years. First, from the standpoint of urinary drainage, and more recently, bacteriostatic drugs.

In 1931 Helmholz and Clark demonstrated that acidification of the urine pushed to high limits by a ketogenic diet would sterilize the urine and free the patient of the infection when such infection was due to the bacillary group of organisms. The effectiveness of the treatment is due to the concentration of beta-hydroxybutyric acid in the urine with a low pH. In this treatment one must have the same rigid cooperation of the patient one has in the treatment of diabetes. The diet is a quantitative one, and varies with the individual patient, usually 1.5 gram of carbohydrates, 0.7 gram of protein per kilogram body weight, and fats for caloric requirements, averaging from 225 grams to 275 grams. This is a deficiency diet, and should be supplemented with cod-liver oil and yeast. Ketosis usually develops in from three to five days, and the infection clears up in from five days to two weeks. There is an occasional patient who will not metabolize fats sufficiently to develop ketosis. The diet is somewhat nauseating, and is not well borne by the acutely ill. To obtain effective clinical results, a concentration of beta-hydroxy-butyric acid of .4 gram per cent in the urine must be obtained coincidental with a pH of 5.2 to 4.8.

In 1935 mandelic acid, a member of the hydroxy group, was found to be excreted unaltered in the urine, which it rendered bacteriostatic. The recommended dosage for the adult is twelve grams daily in divided doses. The drug is soluble in water, and can be given in the acid form, but it is best tolerated by the patient in the ammonium or sodium salt. The acidity of the urine may be increased by the addition of ammonium chloride or ammonium nitrate.

While taking this drug better results are obtained by limiting the twenty-four-hour intake of fluids to 1,200 cubic centimeters and keeping the patient on an acid ash diet. Following these recommendations, concentration of the acid, varying from 0.25 per cent to one per cent, can be obtained in the urine, rendering it bacteriostatic in a pH of 5.7 to 4.8.

Mandelic acid is most effective against the bacillus coli and less effective against the bacillus pyocyaneus and bacillus proteus. It is of no value in the treatment of the coccic infections. In cases with poor renal function the drug is not excreted in sufficient concentration to be effective. In giving mandelic it is essential to keep a close check on the urine for improvement, and to see that the pH is kept sufficiently low for good results.

Clark and others have reported no instances of toxic effects or lowered renal function occurring from the use of this drug. However, Cook, Bushtel, and Dolan have noted slight elevation of the blood urea and slight decrease in renal function occurring while the patient was under treatment. We have seen no evidence of renal injury after as much as three weeks of continued use. However, for a matter of safety, while giving this drug to pregnant women, one should keep the patient under close observation, with frequent urinalyses, blood urea examinations, and regular blood pressure readings.

The treatment of this disease may be divided into four phases. The first phase is the treatment of the low grade infections. This includes the patients who come to their physician complaining of mild urinary symptoms, and usually go unrecognized as having pyelitis. All pregnant women who consult their physicians complaining of symptoms suggestive of the urinary tract should have a catheterized specimen of urine analyzed and cultured. If the culture shows colon bacillus infection, mandelic acid should be administered. If the patient fails to tolerate this drug, the ketogenic diet should be tried, remembering that this diet must be followed rigidly to obtain results. Should the patient fail to handle either the drug or the diet, then fluids should be forced, hexymethylamine and an acidifier given, alternating at weekly intervals with an alkali. The use of the various other recommended urinary antiseptics such as pyridium, hexyresorcinol, etc., are of no avail. In the cocci infections, neoarsphenamine should be given in .4 gram doses, also keeping the patient under close observation while administering this drug. Special attention should be given for the relief of constipation. All foci of infection should be investigated and relieved so far as possible. If the patient fails to respond in two to three weeks, the urinary tract should be investigated, and the pathology corrected. These mild cases do not require confinement to bed unless they are running an elevation of temperature. By making a careful investigation and giving adequate treatment in these low-grade cases, they are freed of infection, and severe attacks with resultant renal damage are prevented.

The second phase is the treatment of the cases of acute pyelitis. In the acute stage complete bed rest is essential, postural relief of pressure of the affected side may help in some cases. Fluids should be forced by mouth if tolerated, if not subcutaneous normal saline or five to ten per cent glucose intravenously should be administered sufficiently to keep up the water balance. The patient should have a bland diet. Purgatives or enemas should be given as necessary for the relief of constipation. Alkalis, administered freely, are of aid. Sedatives and analgesics, morphine if necessary, should be given sufficiently to obtain rest.

Many of these patients are extremely toxic. If symptoms are not relieved within a week or ten days, under palliative measures, an indwelling ureteral catheter should be inserted to relieve stasis and eliminate toxemia. It is essential to pass the catheter with the least possible discomfort to the patient, and a minimum of trauma to prevent a miscarriage. The catheter should be as large as the ureter will take. A nurse should watch the catheter closely and irrigate it as often as necessary to keep up drainage. Normal saline, a one to 1,000 silver nitrate solution, sterile water, or a one to 4,000 acriflavine solution may be used. It matters but little what is used for the irrigation so long as the catheter is kept draining. The catheter is usually left in about forty-eight to seventy-two hours by most urologists. However, Rush has no hesitancy in leaving it in for a longer period with no ill effects. On the other hand, Crabtree is of the opinion that prolonged catheter drainage will produce ureteral strictures.

In cases which continue to run a febrile course, and remain extremely toxic, and whose blood urea becomes elevated, regardless of the treatment, a severe pyelonephritis should be suspected, and pregnancy terminated by the easiest possible method. There may be a miscarriage in these extremely toxic cases from the toxemia so the prognosis of the child must be guarded. The fetal mortality is ten per cent while in normal pregnancy it is 3.3 per cent.

The third phase deals with these same cases after the acute symptoms have subsided sufficiently for the patient to tolerate oral medication. None of the pregnant patients who have developed acute pyelitis are cured when the acute symptoms have subsided. These patients should all be watched carefully, and treatment administered throughout the remaining period of gestation. The treatment in this stage of the disease is the same as that of the low-grade infections.

In the fourth phase is placed the treatment of patients who continue to show evidence of urinary infection post partum. In the acute stage of the disease, there is edema of the mucosa of the pelvis and ureters, which may also involve the muscularis and connective tissue and result in permanent fibrosis, with chronic pyelitis, chronic pyelonephritis, and ureteral strictures. Fortunately ninety per cent of these cases recover completely soon after delivery, while the remaining ten per cent will continue with the infection, some of whom may have acute exacerbation and require postnatal treatment. These patients should have complete urological investigations and repeated ureteral dilatations and pelvic lavage when necessary. A definite effort should be made to eliminate all foci of infection. Drugs should be used as previously discussed. They should be carefully watched until the urine is free of pus and bacteria and no further evidence of the disease is apparent.

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DISCUSSION

DR. ALFRED MASON (Memphis): Members of the Association: I should like to emphasize one of the points that Dr. Williamson brought out, for I feel that it really needs more emphasis than he gave it; that is the importance of early catheterization of the ureter in the acute phase of pyelitis of pregnancy; that is where you have a patient who is seized with a sudden acute pain in either flank, with high persistent fever and the ordinary symptoms of toxemia, dehydration, and frequently nausea and vomiting.

I have a patient still in the hospital now who illustrates this point very clearly. This lady came in from the rural districts of a neighboring state and she had had, for several days, complete blockage of her right ureter. Immediate catheterization was instituted, but her temperature did not subside, except very slightly, and with adequate treatment and drainage she continued to run high fever. The kidney was definitely enlarged, and surgical exploration showed that she had multiple abscesses throughout the cortex of the kidney. No doubt that could have been entirely prevented had that ureter been catheterized and the obstruction relieved when her acute symptoms first began. Medical treatment should follow the drainage of the kidney, but it is obvious that when you have a kidney that is completely obstructed and is excreting no urine, all the medicine in the world that you give is not going to do the infection on that side any good, because the medicine is not going to be excreted by that kidney because there is no urine coming through, and consequently medicine that you give does not reach the infection in the kidney pelvis on the obstructed side until the obstruction is relieved.

Dr. Williamson has brought before you an excellent paper on a subject that should receive more attention from the medical profession as a whole.

DR. G. A. WILLIAMSON (closing): I thoroughly agree with the statements of Dr. Mason.

A RESUME OF 139 CASES OF FUNCTIONAL NEUROSES*

JESSE C. HILL, M.D., Knoxville

THE LONGER one gives serious thought to the conditions called neuroses, and psychoneuroses or functional neuroses (we may say their relation to each other is like the name William and Bill; they sound different, but apparently have the same meaning), the more nearly we are convinced that they are the formative or abortative stage of psychosis. Let us review some of our authorities.

Dercum—Undue expenditure of energy due to modern civilization.

Janet—Lowering of physiological tension.

Ebaugh—Diminution of personal efficiency.

Freud—A defense reaction from a buried complex.

White—Borderland states of departure from the normal, whose aggravated forms appear in a psychosis.

Sadler—Defense reactions in long emotional conflicts or in long social or economic maladjustments.

Dithelm—Neurotic reactions in psychotic personalities.

Myer—Part reactions, halfway spaces between normal and psychotic.

Bowers—Without demonstrable physical basis and appear psychogenetic origin.

Gaupp—Not a disease entity, but a psychopathic reaction to demands of life.

Curschmann—A faulty response to the difficulties which life offers.

No.	T	M	F	Causative Factor	Recovered			Improved			Unimpr'vd			
					T	M	F	T	M	F	T	M	F	
1	34	9	25	Undetermined	7	1	6	14	3	11	13	5	8	Complete Blood, W. & B. M.—Negative
2	21	2	19	Sexual	4	---	4	12	---	12	5	2	3	Complete Blood, W. & B. M.—Negative
3	20	6	14	Endocrine	9	---	9	11	6	5	---	---	---	1. —23 6. —21 11. +14 16. —32 2. —17 7. +43 12. —27 17. —20 3. —45 8. +27 13. —37 18. —14 4. —37 9. +19 14. —21 19. —31 5. —33 10. +33 15. —26 20. —15 Complete Blood & W.—Negative
4	17	2	15	Environment	14	2	12	3	---	3	---	---	---	Complete Blood, W. & B. M.—Negative
5	14	1	13	Occupational	10	1	9	4	---	4	---	---	---	Complete Blood, W. & B. M.—Negative
6	9	---	9	Operative Shock	---	---	---	9	---	9	---	---	---	Complete Blood, W. & B. M.—Negative
7	8	7	1	Money	8	7	1	---	---	---	---	---	---	Complete Blood, W. & B. M.—Negative
8	6	4	2	Long Sickness	5	3	2	---	---	---	1	1	---	Complete Blood, W. & B. M.—Negative
9	6	6	---	Alcohol	6	6	---	---	---	---	---	---	---	Complete Blood, W. & B. M.—Negative
10	4	---	4	Hair Dressing	4	---	4	---	---	---	---	---	---	Complete Blood, W. & B. M.—Negative
Tot	139	37	102		67	20	47	53	9	44	19	8	11	

We will now review the cases as on the above chart.

Undetermined. — Male, 9; female, 25. Psychotic history negative. Complete blood, Wassermann and B. M. negative. Treatment: model life as far as possible; small doses of triple bromides; eighteen doses of six-tenths neosalvarsan when they can pay for same; and lots of encouragement.

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*Read before Greene County Medical Society, July 6, 1937.

Supplementary Chart

Ages	M.	F.
19-34	7	21
35-60	2	4

Social State

	M.	F.
Single	7	19
Married	2	6

Occupation

	M.	F.
Students	6	15
Store Clerks	1	2
Office Helpers	2	-
Stenographers	-	3
House Workers	-	4
Agents	-	1

Duration

	M.	F.
3 mo.-1 yr.	8	13
1 yr.-4 yrs.	1	12

Sexual.—Male, 2; female, 19. Psychotic history in twenty per cent of cases. Complete blood, Wassermann and B. M. negative. Treatment: no medicine, but advice.

Supplementary Chart

Ages	M.	F.
19-34	2	5
35-60	-	14

Social State

	M.	F.
Single	2	3
Married	-	18

Occupation

	M.	F.
Students	2	1
Housewives	-	18
Stenographer	-	1
School Teacher	-	1

Duration

	M.	F.
3 mo.-1 yr.	-	6
1 yr.-4 yrs.	2	13

Endocrine.—Male, 6; female, 14. Psychotic history two per cent. Complete blood and Wassermann negative. B. M. as per chart. Treatment: glandular and iodides.

Supplementary Chart

Ages	M.	F.
19-34	6	5
35-60	-	9

Social State

	M.	F.
Single	6	3
Married	-	11

Occupation

	M.	F.
Students	6	2
Housework	-	8
Clerks	-	4

Duration

	M.	F.
1 yr.-3 yrs.	6	5
3 yr.-7 yrs.	-	9

Environment.—Male, 2; female, 15. No psychotic history. Complete blood, Wassermann and B. M. negative. Treatment: no medicine, just advice.

Supplementary Chart

Ages	M.	F.
19-34	2	15
35-60	-	-

Social State

	M.	F.
Single	-	-
Married	2	15

Occupation

	M.	F.
Merchants	2	-
Housewives	-	15

Duration

	M.	F.
3 mo.-1 yr.	-	6
1 yr.-3 yrs.	2	9

Occupational.—Male, 1; female, 13. No psychotic history. Complete blood, Wassermann and B. M. negative. The male patient had a foreman who was overbearing, but after the foreman realized the patient's condition he became more kind, and the patient recovered. The thirteen female patients changed positions. They were given no medicine. Nine apparently recovered. The other four improved.

Operative Shock.—Male, 0; female, 9. No psychotic history. Complete blood, Wassermann and B. M. negative. Treatment: occupational therapy.

Supplementary Chart

19-34	F. 2
35-60	F. 7

No. of Operations

2 had 3 abdominal
3 had 4 abdominal
2 had 5 abdominal
1 had 6 abdominal
1 had 7 abdominal

Money.—Male, 7; female, 1. Psychotic history fifty per cent. Complete blood, Wassermann and B. M. negative. Treatment: settlement of damage suit.

Female, age fifty. Hit by automobile. Not injured. Money neurosis for six months. Settled, patient well in three days.

Male, age fifty-four. Bumped by streetcar. Duration nine months. Thrown out of court. Well in two weeks.

Male, age nineteen. Concussion of brain. Automobile accident. Duration two years. Settled out of court. Well in one week.

Male, age sixty-two. Leg hurt in fall in manhole. Six weeks. Settled out of court. Well in two hours, ready to spend his money.

Male, age twenty-nine. Fell on steamboat. Five years. Won damage suit. Well in twelve hours.

Male, ages thirty-five, forty-one, and sixty. Injured in car wrecks. Duration two months, nine months, and one year, respectively. Settlement out of court. Recovered in about a week's time.

Long Sickness.—Male, 4; female, 2. All patients pulmonary tuberculosis, bed cases. Suggested that they be gotten out of bed, regardless of physical condition. One male not able. Three male and two females responded and cleared up in less than three weeks.

Alcohol.—Male, 6. Patients given ounce of paregoric three times a day. Cut down teaspoon from each dose every day. In nine days patients apparently recovered until the next time.

Hairdressing.—Female, 4. All patients recovered in a week's time when they were told cause and stopped same.

SULFANILAMIDE IN THE TREATMENT OF GONORRHEA

TOM R. BARRY, M.D., G. A. WILLIAMSON, M.D., Knoxville

SINCE the publication of Domagk on the effect of prontysil in hemolytic streptococci infection, an almost universal interest has been aroused in this drug, which is indicated by the voluminous literature, both medical and otherwise, on the subject. This preparation has been shown to be antibactericidal to various organisms, including gonococci. Dees and Colston were first to call attention to its efficacy in the treatment of gonorrhea.

They reported a series of nineteen cases of gonorrheal infection treated with sulfanilamide with the following results. Five cases were cured in two days, five cases in three days, two cases in five days, one each in four, six, and twenty-three days. In the preliminary report they sounded a warning as to its possible toxic dangers.

The physiology of the drug is not definitely known, but Marshall demonstrated the rapid absorption from the gastrointestinal tract. He found it in practically all the body fluids, and showed that it is excreted rapidly and almost entirely by the urinary tract, both in unchanged and conjugated form, and that retention of the drug in the blood occurs in cases of poor renal function.

Proom has shown that sulfanilamide protects up to one million lethal doses of meningococcic infection in mice.

Hill states that the urine of patients secreting sulfanilamide has no bactericidal effect on beta-hemolytic streptococci, and that streptococcus faecalis is also quite resistant to its action. "Only a small amount of sulfanilamide remains in the blood, a few minutes after intravenous administration, and when given by mouth absorption is complete within four or five hours."

Marshall and Kendall have devised a method of determining the concentration of sulfanilamide in the body fluids which is sensitive to one in twenty million.

"After subcutaneous injection of large doses of sulfanilamide it appears in the urine within fifteen minutes." "When given by mouth every four hours, it takes three or four days for an equilibrium to be reached, and the same amount of time for sulfanilamide to disappear after cessation of treatment." "Almost a hundred per cent can be recovered in the urine when the body is in equilibrium."

The presence of sulfanilamide has been demonstrated in the pancreatic juice, pleural fluids, saliva, and the cerebrospinal fluid, the concentration of the latter being the same as in the blood, which is between one to five and one to ten thousand. This can be maintained in the blood indefinitely. "Factors involved in concentration are dosage, efficiency of the kidneys, rate and absorption of the gastrointestinal tract, etc." "There is no advantage of the subcutaneous or intravenous over the oral administration."

Optic neuritis, various skin eruptions, agranulocytic anemia, sulfhemoglobinemia, and methemoglobinemia have been reported as occurring after the administration of sulfanilamide.

As stated above, patients with impaired kidneys are longer in excreting the drug, and for this reason poor renal function is one contraindication to its use. It is likewise our impression that patients with serious cardiac diseases should not be treated with this preparation.

This paper is based on our experience with seventy-two cases of gonorrhea. In this number, there were six females and sixty-six males. Of this series, thirty-five were classified as acute and thirty-seven chronic.

This drug has been used on more than 150 cases, but due to incomplete records (failure to return for treatment, etc.) only seventy-two were selected for consideration. No cases were selected except those who presented themselves for treatment and observation for a period of two weeks or longer. Of this number (seventy-two) sixty were cured with sulfanilamide alone. There were three relapses, two of which required additional treatment with other drugs, and one was cured with sulfanilamide alone. Many cases showed no discharge after the second day of treatment. The lowest number of days for cure in the male was two, in the female twelve. The longest period of cure was forty-one days for the male, and thirty for the female, or an average of 11.1 days for the male, and thirty for the female. Of these sixty cases only fourteen had a second positive smear. There were twelve patients in this series that required additional treatment such as injections, irrigations, and massage. In this class one patient required thirty days, and eleven required over six weeks. We have classified our reactions as mild when only dizziness, lassitude, and cynosis of the lips were present. This included twenty-six cases. In the severe reaction group, we included those with chills, fever, and rash. There were twelve in this group. Many patients complained of symptoms similar to those of influenza, and a large number reported temperatures up to 104.

The plan of management was as follows: Immediately upon the finding of gonococci in the urethral smear, the patient was given sixty grains of sulfanilamide daily for three days, fifty grains daily for three days, forty grains daily thereafter, depending on the indication. No other type of treatment was given.

All cases were kept on this drug for one week (unless complications arose) regardless of the appearance of the urine or absence of discharge. If, at the end of one week, both urines were clear, and provided the discharge had disappeared, all treatment was stopped, and the test of cure was made. It is our impression that if the smear is positive after a week of the above routine treatment, little can be expected with further administration of sulfanilamide, and the treatment is reinforced with urethral injections.

Subsequent administration of sulfanilamide has, in most cases, been disappointing. Although our experience in the female is rather limited, and the number of days of cure is somewhat longer than in the male, we feel that these statistics do not show the true comparison. We believe that the drug is just as efficacious, if not more so, in the female. We likewise feel that sulfanilamide acts just as well in chronic as in acute cases. One case treated for one year prior to the use of sulfanilamide, who had many relapses, showing positive smears, was completely cured in one week of sulfanilamide administration.

We have used the following routine as a test for cure: First, all treatment is stopped. Second, proper sized sounds are passed. Third, one per cent silver nitrate is injected into the urethra. Following the latter, slides were given the patient to obtain morning smears.

If after one week of observation and examination both urines are macroscopically clear, and the microscopic examination shows only a few pus cells with negative urethral smears, we consider the patient cured.

It has been emphasized that sulfanilamide is apparently more potent in an alkaline urine (bacillus proteus infection) and for that reason one teaspoon of soda is given after meals. Magnesium sulphate and eggs are both interdicted.

We have selected seventy-two consecutive cases treated under the old regime as a comparison. The shortest period of cure was twenty-one days, the longest period was seven months, with an average of eleven weeks. It will be seen that sixty-four of these seventy-two cases required more than six weeks' treatment, which gives one an idea of the economic advantage of sulfanilamide in the treatment of gonorrhea.

In one case of acute salpingitis with severe pain, and so forth, all symptoms subsided in thirty-six hours after administration.

We are unable to explain its specific action in some cases and absolutely negative results in others. We have had a man and wife under treatment at the same time with entirely satisfactory results in the female, and none whatsoever in the male.

This would indeed refute any claims as to the difference in strains.

We have had one case of gonorrheal cellulitis extending from the shoulder to the hand which promptly subsided with sulfanilamide alone. Gonorrheal complications has been almost eliminated. We have had no epididymitis or acute posterior urethritis in this series. Complications occurring prior to sulfanilamide administration respond rather promptly when this preparation is given.

Warnings.—We are convinced that sulfanilamide is a drug which requires intelligent supervision, if embarrassing reactions and fatal terminations are to be avoided. It is the exception, rather than the rule, when a patient is able to take this drug over a long period of time without very unpleasant and alarming symptoms. It would be a catastrophe if this drug should fall into disrepute, as a result of the profession to disregard these toxic symptoms. We are of the opinion that federal and state regulations should be enacted to avoid accidents.

Hartman has called attention to the possible benefits in the administration of methylene blue in methemoglobinemia.

Conclusions. — First, that sulfanilamide approaches a specific in the treatment of the great majority of cases of gonorrhea.

Second, that there is a certain group of cases that will show little response to this drug.

Third, that sulfanilamide may prove of great value in the prophylaxis of this disease.

Fourth, that sulfanilamide should be prescribed with great caution, and sold only on prescription.

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Plan Now to Come to the

105TH ANNUAL MEETING

of the

TENNESSEE STATE MEDICAL ASSOCIATION

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
Devoted to the Interests of the Medical Profession of Tennessee
Office of Publication, 508 Doctors Bldg., Nashville, Tenn.

Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 15, 1932.

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H. H. SHOULDERS, M.D., Editor and Secretary

FEBRUARY, 1938

EDITORIAL

HEALTH IN RELATION TO INCOME

In the fall and winter of 1935 and 1936 a survey was made by the United States Public Health Service for the purpose of determining the health status of a large number of people. In all, 776,000 families were studied, 740,000 of which were urban and 36,000 rural. This proportion between rural and urban is not accurate in relation to the proportion which exists in the general population.

Since the report of the findings were published, a great deal of comment has appeared in the lay press. In this comment emphasis has been given to the relationship between income and mortality and morbidity.

As has been said before and as has been recognized for a long time, there is a definite relationship between income and morbidity and mortality. There is also a relationship between income and many other factors. There is a relationship between income and shiftlessness. There is a relationship between income and inability to perform skilled work. There is a relationship between income and the indisposition to acquire a skill. There is a relationship between income and hereditary biologic factors which have to do in determining the mental and physical and personality characteristics of human individuals.

It is unfortunate that the survey did not take into account all the factors which have a bearing on income and on health.

There is much evidence to indicate that the low income and the low health status both may be attributed to the same other factors and that the relationship between income and health is incidental. For example, all practitioners know of families who have unclean habits, who live in unclean surroundings, who have no ambition to be clean even if the facilities for cleanliness are provided. The same families would have a low income. In such a case the low income is not responsible for the low health status. The low income and the low health status are both due to the attributes which make them what they are.

It has not been demonstrated that the health status of such a family would be improved materially as a result merely of increasing their financial income unless the financial income is associated with a corresponding improvement in their habits and environmental conditions.

In these respects then the survey has fallen down in the making of an accurate portrayal of all the factors which enter into the production of poverty and morbidity.

It is also obvious that the administration of some measure which would have the effect of increasing the income of these people would not result in a corresponding improvement in their health status unless the other factors which contribute to ill-health are corrected at the same time.

At the present moment there is a great need for careful thinking and planning.

There is a disposition on the part of some to ask for the appropriation of large sums of money, or to inaugurate measures directed at the correction of some one factor in the whole setup which, in my opinion, would be ineffective in accomplishing the end we all desire, *i. e.*, adequate income and a satisfactory health status for the population as a whole.

THE NEXT STATE MEETING

The next meeting of the Tennessee State Medical Association takes place in Nashville, April 12, 13, 14.

The Noel Hotel has been designated as headquarters.

Plans are in progress and near completion for what is hoped will be the best meeting the state ever had.

It is now time for the members to mark the calendar.

DEATHS

Dr. M. G. Herrell, Powell Station; Lincoln Memorial University, Medical Department, Knoxville; 1906; died February 4.

RESOLUTIONS

DR. WALTER J. MILLER

Dr. Walter J. Miller, aged eighty-two, was a graduate of Vanderbilt University and for a number of years was a member of the state board of health. He retired from the active practice of medicine about twenty-five years ago. During his many years of practice he was considered one of the leading physicians of East Tennessee. He was a popular practitioner of the old school, always ethical and deeply interested in his patients and was eminently successful in the practice of his profession. He filled a position on the state board of health with credit and was greatly beloved by all those that knew him, and during his years of retirement always stood ready to be of any possible service in civic and community activities.

Therefore Be It Resolved, That the Washington County Medical Society record its appreciation of the splendid service of this one of the oldest members of this society. His passing from among us has caused genuine sorrow and distinct loss to the medical fraternity and the community.

Be It Further Resolved, That these resolutions be spread upon the minutes of the Washington County Medical Society, a copy sent to the state medical journal, and a copy to the surviving members of his family.

Respectfully submitted,

(Signed) N. E. HARTSOOK, M.D.,
C. W. FRIBERG, M.D.,
W. M. BEVIS, M.D.

NEWS NOTES AND COMMENTS

AMERICAN BOARD OF OPHTHALMOLOGY

The American Board of Ophthalmology announces that in 1938 it will hold examinations in San Francisco, June 13, during the American Medical Association; Washington, D. C., October 8, during the American Academy of Ophthalmology and Otolaryngology; Oklahoma City, November 14, during the Southern Medical Association.

Application blanks can be procured from Dr. John Green, 3720 Washington Avenue, St. Louis, Missouri.

The American Board of Ophthalmology has established a preparatory group of prospective candidates for its certificate. The purpose of this group is to furnish such information and advice to physicians who are studying or about to study ophthalmology as may render them acceptable for examination and certification after they have fulfilled the necessary requirements. Any graduate or undergraduate of an approved medical school may make application for membership in this group. Upon acceptance of the application, information will be sent concerning the ethical and educational requirements, and advice to members of the group will be available through preceptors who are members or associates of the board. Members of the group will be required to submit annually a summarized record of their activities.

RULES GOVERNING THE AWARD OF "THE FOUNDATION PRIZE" OF THE AMERICAN ASSOCIATION OF OBSTETRICIANS, GYNECOLOGISTS, AND ABDOMINAL SURGEONS

(1) The award which shall be known as "The Foundation Prize" shall consist of $500.

(2) Eligible contestants shall include only (a) interns, residents, or graduate students in obstetrics, gynecology, or abdominal surgery, and (b) physicians (with an M.D. degree) who are actively practicing or teaching obstetrics, gynecology, or abdominal surgery.

(3) Manuscripts must be presented under a nom de plume, which shall in no way indicate the author's identity, to the secretary of the association, together with a sealed envelope bearing the nom de plume and containing a card showing the name and address of the contestant.

(4) Manuscripts must be limited to 5,000 words, and must be typewritten in double-spacing on one side of the sheet. Ample margins should be provided. Illustrations should be limited to such as are required for a clear exposition of the thesis.

(5) The successful thesis shall become the property of the association, but this provision shall in no way interfere with publication of the communication in the journal of the author's choice. Unsuccessful contributions will be returned promptly to their authors.

(6) All manuscripts entered in a given year must be in the hands of the secretary before June 1.

(7) The award will be made at the annual meetings of the association, at which time the successful contestant must appear in person to present his contribution as a part of the regular scientific program, in conformity with the rules of the association. The successful contestant must meet all expenses incident to this presentation.

(8) The president of the association shall annually appoint a committee on award, which, under its own regulations, shall determine the successful contestant and shall inform the secretary of his name and address at least two weeks before the annual meeting.

JAS. R. BLOSS, M.D., *Secretary.*
418 Eleventh Street, Huntington, W. Va.

DOCTOR WANTED

We have a territory here that is twelve or fourteen miles in any direction to a doctor. One, Dr. Illan Glover, has been doing this practice for thirty years, and he is now not able to do this practice, and we want a doctor to come and locate among us. We have a thickly-settled section, good citizenship, good farming section, good schools, and churches.

I am a merchant here at Clayton, Tennessee, and have been in business for fifty-six years. Please let me hear from you.

(Signed) A. E. CALDWELL.
Route No. 2, Troy, Tennessee.

PHYSICIANS' ART ASSOCIATION

The American Physicians' Art Association, a national organization of medical men who have ability in the fine arts, will hold a *first national exhibition* in the San Francisco Museum of Art, San Francisco, California, in June, 1938. (The American Medical Association Convention is June 13-17 in the same city.)

The American Physicians' Art Association already has an outstanding membership. There are three classifications for membership: active, associate, and contributing. The *first annual exhibition* promises to be of unusual interest with entries to be accepted (after jury selection) in the following classifications: oils, water colors, sculpture, photography, pastels, etchings, crayon, and pen and ink drawings (including cartoons), wood carvings, and bookbindings. Scientific medical artwork will not be accepted. The exhibition is not limited to first showings. All entries close April 1, 1938. Any physician interested should communicate at once with the secretary of the American Physicians' Art Association, Suite 521-536 Flood Building, San Francisco, California.

SURGICAL CONGRESS MEETS IN LOUISVILLE

The Southeastern Surgical Congress will hold its Ninth Annual Assembly in Louisville, Kentucky, March 7, 8, and 9, 1938, at the Brown Hotel. The following men will present papers and conduct clinics during the assembly:

Babcock, W. Wayne, Baltimore, Maryland: "The Operative Treatment of Vesicovaginal and Related Fistula."

Ballenger, E. G., Atlanta, Georgia: "Sulfanilamide."

Blalock, Alfred, Nashville, Tennessee: "A Consideration of the Treatment of Shock."

Blake, W. H., Sheffield Alabama: "The Surgeon and the Pelvis."

Borland, J. K., Jacksonville, Florida.

Bradley, E. B., Lexington, Kentucky.

Brenizer, Addison, G., Charlotte, North Carolina: "The Development of Ureteral Transplantation and Cystectomy — Two Original Methods."

Cahill, George F., New York City: "Experience in Diagnosing Adrenal Tumors."

Campbell, Willis, Memphis, Tennessee: "Malunited Fractures of the Ankle."

Cohn, Isidore, New Orleans, Louisiana: "A Logical Treatment for Osteomyelitis."

Coleman, C. C., Richmond, Virginia: "Penetrating Wounds of the Brain" (co-author Dr. Frank H. Mayfield, Cincinnati, Ohio).

Crile, George W., Cleveland, Ohio: "The Operative Treatment of Essential Hypertension."

Davis, Edgar W., Washington, D. C.: "Bronchial Tumors, Diagnosis and Treatment."

Gatch, W. D., Indianapolis, Indiana: "Some Observations on Wound Healing."

Haggard, W. D., Nashville, Tennessee.

Hertzler, Arthur, Halstead, Kansas: "The Operating Room Diagnosis of Uterine Bleeding." Clinic, "The Treatment of Prolapse of the Uterus."

Heyd, Charles G., New York City.

Kessler, Henry H., Newark, New Jersey: "Rehabilitation of Amputation Cases."

King, Jos. E. J., New York City: "Brain Abscess, etc."

Lewis, Dean, Baltimore, Maryland.

Lockwood, A. L., Toronto, Canada: "The Surgical Dyspepsias."

Lyons, Champ, Boston, Massachusetts: "Modern Methods in the Treatment of Surgical Infections."

McDougall, J. C., Atlanta, Georgia: "Diagnosis and Treatment of Lateral Sinus Thrombosis Complicating Mastoiditis."

MacNider, Wm. deB., Chapel Hill, North Carolina: "The Significance of Certain Changes in Fixed Tissue Cells Which Impart Tissues a Modification in Their Function and an Acquired Resistance."

McLeod, James, Florence, South Carolina: "Nonpenetrating Wounds of the Abdomen."

Moore, Austin T., Columbia, South Carolina: "The Treatment of Fractures of the Hip Joint by Extraarticular Fixation with Adjustable Nails."

Moore, Chalmers H., Birmingham, Alabama: "The Neurosurgical Treatment of Hypertension."

Newell, Quitman U., St. Louis, Missouri: "The Interposition Operation for Prolapse Uteri."

Nesbit, Reed, Ann Arbor, Michigan: "Some Recent Advances in Technique of Transurethral Prostatectomy."

Ochsner, Alton, New Orleans, Louisiana: "Thrombophlebitis."

Owen, W. Barnett, Louisville, Kentucky: "Management of Complicated Fractures of the Forearm."

Smith, C. C., Jr., Norfolk, Virginia: "Thyroids in Tidewater, Virginia."

Storck, Ambrose, New Orleans, Louisiana: "Gunshot Wounds of the Abdomen—Their Modern Management."

Street, Augustus, Vicksburg, Mississippi: "Disease of the Gall Bladder and Bile Duct —Manifestations and Treatment."

Truesdale, Fall River, Massachusetts: "Surgical Treatment of Peptic Ulcer."

Abell, Irvin, Louisville, Kentucky.

Rankin, Fred W., Lexington, Kentucky.

The completed programs will be mailed out between the fifteenth of February and the first of March. Make plans to attend.

This is said to be the most extensive post-graduate surgical assembly held anywhere in the nation. For information, write Dr. B. T. Beasley, secretary-treasurer, 701 Hurt Building, Atlanta, Georgia.

ADVERTISING PAYS

If you read the ads and ask for information, samples, and other items suggested in the ads, advertisement will pay you for your trouble in the information received. It will also show the advertisers that your JOURNAL is read and it will help your association maintain the kind of a JOURNAL you want. So sit down now, send off a bunch of coupons that you will find in this JOURNAL and you will be surprised how much advertising will pay YOU.

Anderson County Medical Society met in its regular monthly meeting February 7 at the Anderson County Medical Unit in Clinton, Tennessee. The following members were present: Drs. Cox, Hall, Ballou, Jennings, Dings, and DuBard.

An interesting paper on "Diseases of the Cervix" was read by Dr. O. E. Ballou, which was followed by a discussion of same by members of the society. Dr. Thomas Jennings reported on an interesting paper read from a current medical journal.

WOMAN'S AUXILIARY

President ---------------- Mrs. W. T. Black
Memphis
President-elect ---------- Mrs. H. E. Christenberry
Knoxville
Press and Publicity ------------ Mrs. B. F. Byrd
Nashville

The members of the Davidson County Auxiliary are all enthusiastically at work on plans and preparations for the eleventh annual state convention to be held in Nashville, April 12, 13, and 14. The Hermitage Hotel will be the official headquarters so make your reservations *now* and stay the entire time.

The plans as arranged include a luncheon on Tuesday for the executive board given by Mrs. W. T. Black, president. This will be followed by a preconvention board meeting. The evening will be given over to a reception and musical.

Wednesday a series of interesting affairs will include the annual business meeting, luncheon, historic drive, and the state dinner.

Mrs. H. E. Christenberry, president-elect, has chosen Wednesday afternoon for her postconvention board meeting.

We would like for each one of you to spread the convention news and help us to have a full attendance. A detailed outline will be announced in the March issue of the JOURNAL.

We hope to see all of our old friends here and many, *many* new ones.

MRS. THEODORE MORFORD,
Convention Chairman.

RUTHERFORD AND CANNON COUNTIES

The value to the public of the magazine *Hygeia* and its aid in distinguishing certain "quack medicines" and "cure-alls" from accepted remedies was the topic discussed by Mrs. J. F. Adams of Woodbury at the regular program meeting of the Woman's Auxiliary to Stones River Academy of Medicine on Friday, January 14. The meeting was in the home of Mrs. B. W. Rawlins. Mrs. M. B. McCrary, president, conducted the business session. After adjournment, the hostess served delicious afternoon refreshments.

SHELBY COUNTY

"Legislation" was the subject discussed by Dr. H. B. Everett at the January meeting of the Woman's Auxiliary to Shelby County Academy of Medicine at University Center. Following the business session at which Mrs. W. T. Braun, the president, presided, luncheon was served buffet. Mrs. R. E. Flack and Mrs. John J. Shea were in charge of arrangements for this delightful occasion.

KNOX COUNTY

A Valentine tea party with books, rather than paper hearts, as gifts is being planned by the Auxiliary to Knox County Medical Society for the nurses at General Hospital. The party will be February 14, and each member will bring a book as a gift for the library at the nurses' home. Mrs. W. W. Potter serves as chairman of this event. A program on cancer education featured the meeting on January 3. Dr. Ralph Monger in his address showed slides concerning the disease. The speaker was introduced by Mrs. H. E. Christenberry. Mrs. Benjamin B. Cates is the president and presided over the business session.

DAVIDSON COUNTY

The January meeting of the Woman's Auxiliary to Davidson County Medical Association was held at the home of Mrs. Harvill Hite on Lynwood Boulevard. Following luncheon, a business session was held, with Mrs. Oscar Nelson, president, presiding. Dr. Oscar Nelson, the guest speaker for the day, was introduced by Mrs. Thomas F. Frist, chairman of the program.

PUBLIC HEALTH ACTIVITIES IN TENNESSEE

The Crockett County Health Department was officially organized on January 27 with Dr. H. E. Simmonds as director. The ultimate objective of the Tennessee Health Department is to organize Crockett and Haywood Counties as a health district. Tennessee now has *forty-seven* counties under full-time county or district health service, the greatest number in the history of the state.

All physicians in active practice, who have been out of medical school for five years or more, who are not more than fifty years of age, and who are interested in general postgraduate study fellowships, should communicate at once with Dr. Clarence L. Scamman, Commonwealth Fund, 41 East Fifty-seventh Street, New York City, regarding application blanks and conditions under which fellowships are granted. A limited number of fellowships are available to general practitioners for four months of organized instruction at Vanderbilt Medical School. The fellowships provide tuition and an attractive stipend for the physician during the course of study.

Because of the increasing prevalence of measles throughout the state, the Tennessee Health Department has prepared for distribution to physicians a rather timely summary on the "Prevention and Modification of Measles" by the use of placental extract, convalescent serum, normal adult serum, and whole parental blood. Experience indicates that none of these agents produce active immunity, but will in the majority of cases, dependent upon the time given, prevent temporarily or modify the course of the disease. The following comment was included in the summary: "A small dose given one to four days after exposure will ordinarily modify but not prevent an attack. A larger dose during this time will usually prevent the attack, but if there has been an especially intimate contact with a virulent case, even the larger dose may not prevent. In general, if sufficient dosage is given any time during the incubation period or even until appearance of the rash, some effect may be expected. However, not even the dosage can be measured accurately as there is no standardization of the products. Placental extract may be expected to give most uniform results because it represents a pooled product from many individuals."

The best results, when due consideration is given to age and size of child, time of giving immunizing agent as related to time of exposure, etc., may be expected from the following amounts:

Placental extract	2 to 3 cubic centimeters
Convalescent serum	4 to 6 cubic centimeters
Normal adult serum	6 to 10 cubic centimeters
Whole parental blood	15 to 30 cubic centimeters

The protective agents are listed in the order of preference. Placental extract is recommended first because of the small volume of the dose and its uniform potency. Convalescent serum from a recently recovered case or cases is not difficult to obtain during a measles epidemic. Normal adult serum or whole parental blood is available at little or no cost. The possibility of transmitting syphilis by use of serum or whole blood must not be overlooked.

The majority of deaths from measles occurs in children under six years of age. The younger the child the more serious the disease and the more reason for the use of some protective agent.

MEDICAL SOCIETIES

Davidson County:

January 11—"Standard Practices in the Management of Syphilis," by Dr. Gurney Clark. Discussed by Drs. R. H. Kampmeier and J. C. Pennington.

January 19—An address by Dr. Frank E. Whitacre, instructor in the postgraduate obstetrical course.

January 25—"Pilonidal Cyst of Nose" and "Dermoid of Floor of Mouth," by Dr.

(Continued on page 74)

LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

President—Dr. Geo. C. Williamson, Columbia.
Vice-President for West Tennessee—Dr. F. K. West, Rossville.
Vice-President for Middle Tennessee—Dr. Jack Witherspoon, Nashville.
Vice-President for East Tennessee—Dr. Andrew Smith, Knoxville.
Secretary-Editor—Dr. H. H. Shoulders.
Assistant Secretary-Editor—Dr. W. M. Hardy.

TRUSTEES

Chairman and Treasurer—Dr. C. M. Hamilton, Doctors Building, Nashville.
Dr. A. F. Cooper, Goodwyn Institute Building, Memphis.
Dr. E. R. Zemp, Walnut Street, Knoxville.
Dr. Franklin B. Bogart, Medical Arts Building, Chattanooga.
Dr. W. L. Williamson, 915 Madison Ave., Memphis.

COUNCILORS

First District—Dr. L. E. Dyer, Greeneville.
Second District—Dr. S. R. Miller, Knoxville.
Third District—Dr. Hiram A. Laws, Jr., Chattanooga.
Fourth District—Dr. J. T. Moore, Algood.
Fifth District—Dr. John W. Sutton, Petersburg.
Sixth District—Dr. H. S. Shoulders, Nashville.
Seventh District—Dr. C. D. Walton, Mt. Pleasant.
Eighth District—Dr. J. R. Thompson, Jackson.
Ninth District—Dr. E. H. Baird, Dyersburg.
Tenth District—Dr. W. B. Burns, Memphis.
Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

Delegates to the American Medical Association—
Dr. E. G. Wood, Knoxville; East Tennessee.
Dr. H. H. Shoulders, Nashville; Middle Tennessee.
Dr. H. B. Everett, Memphis; West Tennessee.

Alternates—
Dr. E. T. Newell, Chattanooga; East Tennessee.
Dr. J. O. Manier, Nashville; Middle Tennessee.
Dr. E. C. Ellett, Memphis; West Tennessee.

OFFICERS OF COUNTY MEDICAL SOCIETIES

County	President	Vice President	Secretary
Anderson	O. E. Ballou, Clinton	Geo. W. Kelly, Clinton	J. S. Hall, Clinton
*Bedford	James W. Reed, Belfast	James N. Burch, Shelbyville	W. H. Avery, Shelbyville
Blount	G. D. LeQuire, Maryville	W. C. Crowder, Maryville	J. Frank Manning, Maryville
*Bradley	J. Lake McClary, Cleveland	W. C. Stansberry, Cleveland	C. H. Taylor, Cleveland
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Carroll	O. W. Fesmire, Trezevant		J. H. Williams, McKenzie
Carter	A. R. Collins, Watauga Valley	H. P. Damron, Elizabethton	E. T. Pearson, Elizabethton
*Chester, Henderson, and Decatur	H. T. Pitts, Henderson		L. C. Smith, Henderson
Cocke	J. A. P. Shields, Hartford	W. C. Ruble, Drew A. Mims, Newport	W. E. McGaha, Newport
*Cumberland	F. W. Mitchell, Crossville		V. L. Lewis, Crossville
Davidson	W. B. Anderson, Nashville	M. S. Lewis, Nashville	J. P. Gilbert, Nashville
*Dickson	L. F. Loggin, Charlotte		R. P. Beasley, Dickson
Dyer, Lake, Crockett	J. O. McKinney, Friendship	J. E. Frazier, Newburn (Dyer)	C. L. Denton, Dyersburg
		J. P. Moon, Tiptonville (Lake)	
		W. H. Stallings, Friendship (Crockett)	
*Fayette, Hardeman	F. K. West, Rossville	B. F. McAnulty, Bolivar	Wiley D. Lewis, Bolivar
Fentress	C. A. Collins, Wilder	A. H. Crouch, Forbus	J. P. Sloan, Jamestown
Franklin	Geo. F. Bogart, Sherwood	Henry T. Kirby-Smith, Winchester	John M. Hardy, Sewanee
*Gibson	H. P. Clemmer, Milan	J. W. Allen, Rutherford	F. L. Roberts, Trenton
Giles	A. W. Deane, Pulaski	G. C. Grimes, Aspen Hill	J. U. Speer, Pulaski
Greene	Hal Henard, Greeneville	R. S. Cowles, Greeneville	I. F. Phillips, Greeneville
Grundy	O. H. Clements, Palmer	Wm. A. Brewer, Monteagle	T. F. Taylor, Monteagle
		U. B. Bowden, Pelham	
*Hamblen	W. F. Howell, Morristown	R. A. Purvis, Morristown	P. L. Henderson, Morristown
Hamilton	A. M. Patterson, Chattanooga	S. H. Long, Chattanooga	J. Marsh Frere, Chattanooga
Hardin, Lawrence, Lewis, Perry, Wayne	I. T. Keeton, Clifton	Henry N. Moore, Savannah (Hardin)	O. H. Williams, Savannah
		Leo Harris, Lawrenceburg (Lawrence)	
		Paul Wiley, Hohenwald (Lewis)	
		W. E. Turner, Lobelville (Perry)	
		D. L. Woods, Waynesboro (Wayne)	
Haywood	F. P. Hess, Bells	John P. Sharon, Gates	Roy M. Lanier, Brownsville
Henry	A. F. Paschall, Puryear	Elroy Scruggs, Paris	R. Graham Fish, Paris
Hickman	L. F. Pritchard, Only	C. V. Stephenson, Centerville	W. K. Edwards, Centerville
*Humphreys			W. W. Slayden, Waverly
Jackson			E. W. Draper, Gainesboro
Knox	Robt. F. Patterson, Knoxville	R. G. Waterhouse, Knoxville	Jesse C. Hill, Knoxville
Lauderdale	J. R. Lewis, Ripley	J. H. Nunn, Ripley	Thos. F. Miller, Ripley
Lincoln	R. T. Odom, Fayetteville	W. S. Joplin, Petersburg	R. E. McCown, Fayetteville
*Loudon	Halbert Robinson, Lenoir City	J. A. Mourfield, Lenoir City	J. R. Watkins, Loudon
*Macon	D. D. Howser, Lafayette	P. East, Lafayette	J. Y. Freeman, Lafayette
*Madison	J. C. Pierce, Mercer	John E. Powers, Jackson	S. M. Herron, Jackson
Maury	Leon Ward, Mt. Pleasant	H. O. Anderson, Mt. Pleasant	D. B. Andrews, Columbia
McMinn	Boyd McClary, Etowah	C. O. Foree, Athens	D. F. Seay, Englewood
McNairy	F. M. Smith, Selmer		T. W. Humphrey, Selmer
Monroe	R. C. Kimbrough, Madisonville		David M. Cowgill, Madisonville
*Montgomery	Paul F. Wilson, Clarksville	M. L. Shelby, Clarksville	I. E. Hunt, Clarksville
*Obion	M. T. Tipton, Union City	F. B. Kimzey, Union City	W. B. Harrison, Union City
*Overton			A. B. Qualls, Livingston
Polk	Thos. J. Hicks, Copperhill	W. Y. Gilliam, Copperhill	F. O. Geisler, Isabella
Putnam	R. I. Witherington, Cookeville	T. M. Crain, Monterey	Thurman Shipley, Cookeville
Roane	O. H. Coleman, Kingston	F. A. Neergaard, Harriman	J. C. Fly, Kingston
Robertson	W. P. Stone, Springfield	J. W. Wilkison, Springfield	W. F. Fyke, Springfield
Rutherford	T. J. Bratton, Woodbury	John F. Cason, Murfreesboro	J. A. Scott, Murfreesboro
Scott	D. T. Chambers, Norma	Pitney Phillips, Robbins	Milford Thompson, Oneida
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	J. H. Francis, Pres.-Elect, Memphis		F. G. Kelly, Treasurer, Memphis
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		E. Bruce Rhea, Shouns (Johnson)	
*Sumner	I. M. Oliver, Portland	C. H. Donoho, Portland	W. M. Dedman, Gallatin
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Unicoi	H. L. Monroe, Erwin	R. H. Harvey, Erwin	J. J. Wright, Erwin
Warren	John S. Harris, McMinnville	E. L. Mooneyham, Rock Island	John T. Mason, McMinnville
Washington	H. B. Cupp, Mountain Home	Walter Hankins, Johnson City	Carroll H. Long, Johnson City
Weakley	I. A. Moore, Sharon	M. D. Ingram, Dresden	T. B. Wingo, Martin
White	F. T. Tubb, Sparta		A. F. Richards, Sparta
Williamson	J. Knox Galloway, Franklin	W. F. Roth, Jr., Franklin	K. S. Howlett, Franklin
Wilson	J. S. Campbell, Lebanon	R. N. Buchanan, Jr., Lebanon	R. B. Gaston, Lebanon

*1937 Officers

COMMITTEES

The following is a list of the standing committees of the Tennessee State Medical Association provided for in the constitution and by-laws and appointed by the proper authority, together with some special committees appointed under the authority of a resolution by the House of Delegates.

Some of the committees are appointed for a definite period. In such instances the appointment of the committeeman expires with the meeting of the House of Delegates in the year stated opposite his name.

COMMITTEE ON SCIENTIFIC WORK

Dr. H. H. Shoulders, Chairman, Nashville.
Dr. A. F. Cooper, Memphis.
Dr. Frank Harris, Chattanooga.
Dr. A. H. Lancaster, Knoxville.

STATE TUBERCULOSIS COMMITTEE

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Dr. C. M. Oberschmidt, Memphis.
Dr. J. L. Hamilton, Chattanooga.

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Dr. E. H. Baird, Dyersburg.
Dr. E. A. Gilbert, Chattanooga.
Dr. E. G. Wood, Knoxville.
Dr. H. B. Everett, Memphis.
Dr. Lee K. Gibson, Johnson City.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION

Dr. L. W. Edwards, Chairman, Nashville (1939).
Dr. E. W. Cocke, Memphis (1941).
Dr. Battle Malone, Memphis (1940).
Dr. Tom Barry, Knoxville (1938).
Dr. T. R. Ray, Shelbyville (1942).

LIAISON COMMITTEE

Dr. W. C. Dixon, Chairman, Nashville (1941).
Dr. W. P. Wood, Knoxville (1940).
Dr. Hiram A. Laws, Chattanooga (1939).
Dr. Tom Mitchell, Memphis (1938).
Dr. Tom R. Barry, Knoxville (1942).

COMMITTEE ON INSURANCE

Dr. A. F. Cooper, Chairman, Memphis.
Dr. C. M. Hamilton, Nashville.
Dr. S. R. Miller, Knoxville.

COMMITTEE ON MEDICAL DEFENSE

Dr. S. R. Miller, Chairman, Knoxville.
Dr. H. B. Everett, Memphis.
Dr. H. M. Tigert, Nashville.

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Dr. B. F. Byrd, Chairman, Nashville.
Dr. Oliver Hill, Knoxville.
Dr. Percy Wood, Memphis.

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Dr. J. Marsh Frere, Chairman, Chattanooga (1940).
Dr. R. B. Wood, Knoxville (1938).
Dr. D. W. Smith, Nashville (1940).
Dr. H. B. Gotten, Memphis (1938).
Dr. W. O. Baird, Henderson (1939).
Dr. J. M. Lee, Nashville (1939).

COMMITTEE ON MEMOIRS

Not filled.
Dr. H. Quigg Fletcher, Chattanooga.
Dr. E. L. Ellis, Maryville.
Dr. L. J. Lindsey, Covington.
Dr. B. T. Nolen, Franklin.

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Dr. M. S. Lewis, Nashville.
Dr. H. P. Hewitt, Chattanooga.
Dr. Andrew Smith, Knoxville.
Dr. C. W. Friberg, Johnson City.
Dr. L. C. Harris, Lawrenceburg.
Dr. D. T. Holland, Newbern.
Dr. J. E. Powers, Jackson.

COMMITTEE ON CHILD WELFARE

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Dr. Frazier Binns, Nashville.
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Dr. Howard King, Nashville.
Dr. H. S. Shoulders, Nashville.
Dr. J. W. McClaran, Jackson.
Dr. Frank Smythe, Memphis.

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Dr. A. M. Patterson, Chattanooga.
Dr. Robert Patterson, Knoxville.
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Dr. J. F. Hamilton, Memphis.

COMMITTEE ON POSTGRADUATE INSTRUCTION IN OBSTETRICS

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Dr. Franklin B. Bogart, Chattanooga.
Dr. O. W. Hyman, Memphis.
Dr. John M. Lee, Nashville.
Dr. J. O. Manier, Nashville.
Dr. W. L. Williamson, Memphis.
Dr. John B. Youmans, Nashville.

C. S. McMurray. Discussed by Drs. Howard King and N. S. Shofner.

February 1—"Recent Advances in the Understanding of the Causation of Hypertensive States," by Dr. Tinsley R. Harrison. Discussed by Dr. O. N. Bryan.

February 8—"Management of Stones in Upper Urinary Tract," by Dr. J. C. Pennington. Discussion by Drs. M. K. Moulder and C. F. Anderson.

Dyer, Lake, and Crockett Counties:

The Dyer, Lake, and Crockett Counties Medical Society met February 2.

Motion carried unanimously that the society was strongly in favor of future postgraduate courses in pediatrics or internal medicine sponsored by the state medical association. Delegates to state society were so instructed.

Motion carried unanimously that the society favored the plan of the state medical association in cooperating with the Farm Security Administration in rendering medical aid to certain farm families being rehabilitated.

SCIENTIFIC PROGRAM

"Osteogenic Sarcoma," by Dr. J. Paul Baird, Dyersburg.

"The Relationship of Medical and Dental Professions in Focal Infections," by Dr. Russell Moore, Dyersburg.

"Angina Pectoris and Coronary Occlusion," by Dr. Newton Stern, Memphis.

(Signed) C. L. DENTON, *Secretary.*

Fayette-Hardeman County:

The regular meeting was held January 28, 1938.

SCIENTIFIC PAPERS

"The First Two Years," by Dr. Tom Mitchell, Memphis, Tennessee.

"Acute Appendicitis," by Dr. J. W. Bodley, Memphis, Tennessee.

The following officers for 1938 were elected:

President—Dr. F. K. West, Rossville, Tennessee.

Vice-President—Dr. B. F. McAnulty, Bolivar, Tennessee.

Secretary—Dr. Wiley D. Lewis, Western State Hospital, Tennessee.

Greene County:

The Greene County Medical Society met at the Andrew Johnson Clubhouse, Tuesday, February 1, at 6:30 P.M.

Dr. I. E. Phillips presented a paper on "Our Public Health System." Dr. R. S. Cowles opened the discussion.

The following members were present: Drs. C. B. Laughlin, M. A. Blanton, N. H. Crews, R. B. Gibson, C. P. Fox, L. E. Coolidge, R. S. Cowles, J. B. Bell, Hal Henard, W. T. Mathes, and I. E. Phillips.

I. E. PHILLIPS, *Secretary.*

Hamilton County:

The following papers are scheduled to be read:

February 17—"Carcinoma of the Stomach," by Dr. W. E. Bryan. "Medical Treatment of Gall Bladder Disease," by Dr. H. T. Holden. "Ruptured Peptic Ulcer; Report of Eight Cases," by Dr. J. R. Fancher.

February 24—"Recent Advances in the Diagnosis and Treatment of Pneumonia," by Dr. O. C. Gass. "Treatment of Asthmatic Bronchitis," by Dr. T. C. Crowell.

March 3—"Recent Trends in Pediatrics," by Dr. J. B. Phillips. "Problem Presented by the Hard-of-Hearing Child," by Dr. Ben P. Clark.

March 10—"Role of the Vitamins in the Diet," by Dr. J. D. L. McPheeters. "Importance of Endocrines in Practice," by Dr. E. H. Magee. "Hypoglycemia in Obstetrics," by Dr. E. F. Buchner.

Hardin, Lawrence, Lewis, Perry and Wayne:

A meeting of the Five-County Medical Society was held in Waynesboro on Tuesday, January 25.

The following papers were read: President's address, "The Doctor's Standing in the Community," by Dr. J. T. Keeton, Clifton.

"State Medicine," by Dr. W. M. Hardy, Nashville.

"The Medical Care of Clients of the Farm Security Administration of Tennessee" was discussed by all members present.

The plan suggested by the trustees of the association was adopted.

"Sulfanilamide in General Practice," by Dr. Dexter L. Wood, Waynesboro.

"Hemorrhage of the Nose and Throat," by Dr. Sam T. Parker, Jackson.

Meetings are held the last Tuesday each month at Waynesboro.

Knox County:

January 11—"Case Reports by Dr. Joe T. Smith." Discussion opened by Dr. Gilbert Eblen.

January 18—"Syphilis in Eyework," by Dr. Hamilton. Discussion opened by Drs. Leach, Montgomery, and Potter.

January 25—"Infective Mononeuclosis," by Dr. Gilbert Eblen. Discussed by Drs. Ralph Monger, Robert Wood, and H. C. Long.

February 1—"Internal Fixation Central Fracture Neck of Femur," by Dr. Herschell Penn. Drs. Bagwell, Miller, and Jarrell Penn led the discussion.

February 8—"The Treatment of Pneumonia," by Dr. R. B. Wood. Discussion by Drs. Weber, Kyle Copenhaver, and Carmichael.

Putnam County:

At the January meeting of the Putnam County Medical Society, resolutions were passed which were designed to enable physicians to collect their delinquent accounts and to prevent future accounts from becoming delinquent.

The scientific program consisted of a paper by Dr. H. H. Taylor on "Fluid Therapy Surgery" and a report by Dr. Fred Terry on a case of "Acute Bacterial Endocarditis."

Washington County:

The Washington County Medical Society met on Thursday, February 3. The following papers were read:

"Lipoid Pneumonia," by Dr. J. R. Bowman. Discussed by Drs. Poole and Wallace.

"The Use of Tannic Acid in the Treatment of Burns," by Dr. H. B. Cupp. Discussed by Drs. Gibson and Stanton.

OTHER MEDICAL SOCIETIES

Five-County Medical Society:

At a meeting of the Five-County Medical Society held January 20 in Cookeville, Dr. Harlan H. Taylor was elected president; Dr. V. O. Bertram, Crossville, vice-president; and Dr. Fred Terry, Cookeville, secretary-treasurer.

Thirty-two members of the society representing the five counties of Putnam, Cumberland, Jackson, Overton, and White were present.

Scientific papers were read by Dr. F. O. Pearson, Gainesboro, on the subject of "Rocky Mountain Spotted Fever," and Dr. V. O. Lewis, Crossville, on "Some Conservations of Sulfanilamide."

The next meeting will be held at Livingston in March.

VANDERBILT MEDICAL SOCIETY, JANUARY 7, 1938

1. Case Report: "Mediastinal Tumor," by Dr. Edward Parker.

The patient was a twenty-four-year-old white man with history of cough with mucoid sputum for many years, weakness for four years, and vague chest pains, mainly on the right, for three years. On examination, the heart, lungs, and spine were normal; no definite evidence of spinal cord compression and no evidence of multiple neurofibromatosis. X-rays of chest showed mass in posterior mediastinum on right opposite the lower dorsal spine. At operation a large tumor was found on the right extrapleurally lateral and adjacent to the bodies of eighth and ninth dorsal vertebrae. The mass was removed in toto, except for possibly some tumor tissue remaining in the region of an intervertebral foramen into which the tumor apparently extended. Microscopic sections of the tumor revealed a neurofibroma. Recovery was uneventful. After operation, there was no demonstrable intraspinal mass on fluoroscopic and X-ray examination of the spine immediately following spinal air injection. That he shall have a recurrence is possible, but not probable.

This case was discussed by Dr. Ernest W. Goodpasture.

2. "The Relation of Age to the Action of the Renal Pressor Substance," by Dr. Edward Grossman.

This problem has been investigated from the point of view of sensitivity of animals of different ages to the renal pressor substance, and from that of the renin content of the kidneys of such animals. The amount of pressor substance in the kidneys diminishes progressively with advancing age. On the other hand, the oldest animals are most sensitive, and the youngest show the least response to injections of renal pressor extracts. Similar increasing sensitivity with advancing age is not observed when the animals are given injections of other pressor substance.

The paper was discussed by Drs. Hugh J. Morgan, Tinsley R. Harrison, and John Williams.

3. "Some Experiences with the Fuch's Test for Malignancy," by Dr. C. S. Robinson and Mr. Ray Evers.

The Fuch's test for malignancy has been tried on 125 cases. Of these, forty-four were proven, untreated malignancies. All of them gave positive results with the test. Within a few days after treatment by surgery, the test becomes negative. In fifty nonmalignant conditions, no positive results were obtained by the test.

The paper was discussed by Dr. Henry Douglass.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Building, Nashville

Cervical Plexus Block for Thyroidectomy. J. Lewis Amster. Current Researches in Anesthesia and Analgesia, January-February, 1938.

Due to an unbalanced metabolism and a severely overtaxed heart and circulatory system, together with embarrassed respiration from pressure of the thyroid gland itself, and also due to the additional burdens such as dehydration and vomiting following general anesthesia, cervical block anesthesia seems to be the anesthetic method of choice.

The cervical plexus may be blocked by the lateral or posterior approach. The lateral is the most simple in stout subjects. The cervical plexus is formed by the first four cervical nerves. These nerves are injected at their emergence from the cervical vertebrae using a one per cent novocain solution. This solution is also widely distributed in surrounding soft tissues.

Anesthesia takes place immediately. By this method consciousness is maintained, a minimum of bleeding is experienced, and the patient's voice may be tested for prevention of injury to the recurrent laryngeal nerve. One would naturally expect interference with the function of the phrenic and vagus nerves, but none has been encountered.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

Epilating Action of Ethyl Gasoline. H. J. Templeton, M.D., George Michael, Ph.D., and J. M. Key, A.B., Oakland, California. Archives of Dermatology and Syphilology, January, 1938.

The authors report a case of loss of hair on a patient's body who had been working as an automobile mechanic for fifteen years. During this time he handled various gasolines without noting any particular loss of hair. From February 19 to February 23, 1935, he worked around and under an automobile, removing greases and oils from the motor and chassis by means of gasoline atomized through a spray gun. During this process he inhaled the vapor throughout most of the day. Three days later he noted the loss of hair of his left eyebrow and about one-third of his scalp. Within a month two-thirds of the hair on his scalp had fallen out, and by May, 1935, he had lost every hair on his body.

His physician found no evidence of lead poisoning, his Wassermann was negative, and there was no history of illness, accident, or emotional strain preceding the loss of hair. General physical examination revealed nothing of interest except the absence of hair anywhere on his body. His reflexes were normal, red blood count 4,920,000, white blood count 6,600, sixty-five per cent polymorphonuclears, thirty per cent small lymphocytes, and five per cent large lymphocytes, and ninety per cent hemoglobin. No stipple cells were seen. The urine contained a slight amount of lead. All of these tests were done eight months after the patient was exposed to the ethyl gasoline.

The authors carried out a series of experiments on twenty-four adult rats. They were divided into four groups of six. In group one kerosene was applied, group two regular third-grade (no tetraethyl) gasoline, group three regular gasoline with tetraethyl, and group four premium ethyl gasoline. The lower third of each rat was dipped into the fluid and the animal was placed in an individual wire cage in a well-ventilated room. In group one there were no deaths, group two was irritable and noisy following treatment, but there were no deaths, the third group was very noisy and irritable and there were two deaths, and in group four the rats were very noisy and irritable and there were six deaths within twelve hours.

A second experiment was carried out on fifty-one rats. These were painted three times daily for one week over a surface of five square centimeters on the back. The five rats painted with kerosene did not mind the application, and the skin and hair remained normal. The five painted with regular third-grade gasoline resisted the application. The skin became somewhat scaly, but there was no loss of hair. Twenty were painted with tetraethyl and became noisy and acted as though they were in pain. The skin became scaly. At the point of application most of the rats became entirely free from hair, and in the others the hair was very thin. Of fifteen rats painted with premium ethyl gasoline, four died during the week.

The authors carried out further experiments from which they concluded that when gasoline of the brands which were used, containing 0.03 per cent tetraethyl lead and 0.02 per cent ethylene dibromide, is applied to the skin of rats, guinea pigs or rabbits, loss of hair is the result. Regrowth is usually noted in from three to seven weeks. If the stronger premium gas, which contains a larger amount of tetraethyl lead, is used for a week, from one-fourth to one-third of the animals die.

OBSTETRICS AND GYNECOLOGY

By Hamilton V. Gayden, M.D.
Suite 234 Doctors Building, Nashville

Diabetes and Pregnancy. Herrick and Tillman. S. G. and O., 66: 37, January, 1938.

More than a decade ago, the use of insulin in diabetes of pregnancy became general. A sufficient time has therefore elapsed for the collection of material upon which one might base reliable estimates of its effectiveness.

Personal observations of fifty-six patients with sixty-seven pregnancies are made in this communication. In the first place, there was a history of occurrence of diabetes in the family history in 17.8 per cent, and of equally common occurrence was a family history of vascular disease. In none of the patients did the disease begin before puberty, but in fifteen per cent the disease began during pregnancy. This is rather high. Diabetes with onset during pregnancy presents a diagnostic problem for many reasons. There is an unstable metabolic equilibrium, a disordered carbohydrate metabolism, a diminished alkali reserve, a tendency to acidosis, and a tendency to depletion of the glycogen store with resulting hypoglycemia. In most cases these metabolic changes are temporary; in a few they mark the onset of diabetes. The past obstetrical history is striking, for there is a story of repeated stillbirths, abortions, and neonatal deaths. The reproductive capacity of these patients is low. The incidence of hyperthyroidism and vascular disease is high. Provided the maternal care is adequate, the diabetic mother can be carried through pregnancy with little added risk, with a reasonably good chance of a viable infant. Conversely, the fetal mortality in diabetes not adequately supervised and treated remains high. The liability of the diabetic to late toxemia is striking. The authors found that the fetus of the diabetic mother is quite as likely to be underweight as overweight. The routine Caesarean section in these cases is unwise and should be reserved for the cases in which there is a supporting obstetrical indication.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Sudden Occlusion of Retinal Arteries. A. J. Bedell. Archives of Ophthalmology, January, 1938.

Bedell discusses sudden closure of the main retinal artery and reports eight cases illustrated with photographs of the fundus. He arrives at the following conclusions from analysis of the photographs and fields:

"That there is a definite straight-line defect, even when the edematous retina presents a crenated border.

"That the macula may be partly encircled and yet central vision be retained.

"That an embolus may be visible at the apex of the region of white retinal edema which coincides with the part of the retina supplied by that particular artery.

"That a field defect suggesting a raphe is present, is readily recognized, and has been frequently recorded.

"The review of the cases here presented shows:

"That the majority of patients have complained of sudden loss of vision without premonitory obscurations.

"That some occlusions are definitely coincident with cardiac disease and others with hypertension.

"That after a vessel has once been occluded, it seldom, if ever, reopens, but remains as a visible white line."

He pleads for this combined method of parallel study of photographs and fields.

Treatment of Tobacco Amblyopia by Acetylcholine. B. H. Cragg. Archives of Ophthalmology, January, 1938.

Since July, 1936, Cragg has treated five male patients suffering from tobacco amblyopia by the intramuscular injection of acetylcholine bromide. The drug is available in two doses, dose A being 0.03 gram and dose B 0.125 gram. Each patient first received two injections of dose A with an interval of one day between and then a daily injection of dose B until no further treatment was considered necessary or until improvement ceased. In addition patients four and five were given 1 150 grain (0.0004 gram) of physostigmine sulfate daily by mouth on the basis of the suggestion that the action of acetylcholine is enhanced by minute doses of this drug. The results were encouraging: It was found that treatment by this method gives more rapid improvement in vision than that by other methods. The patient in most cases realizes that overindulgence in tobacco has been the cause of his defective vision.

ROENTGENOLOGY

By **Franklin B. Bogart, M.D.**
Medical Arts Building, Chattanooga

Treatment of Epitheliomas of the Nasolabial Fold. O. N. Meland. Amer. J. R. and R. T., Vol. 38, No. 5, p. 730, November, 1937.

Forty-three cases were analyzed, twenty-nine basal cell tumors, two aquamous cell, one mixed cell type. In the other eleven cases biopsies were not taken.

Twenty-three had been treated previously by X-ray, radium, fulguration, paste, and surgery.

Carcinoma in this location has a characteristic line of spread, following the fusion lines occurring during embryological development. The tumor may spread (1) into the nose along the floor of the nares and sometimes into the antrum, (2) up along the old naso-optic furrow toward the inner canthus of the eye, (3) into the upper lip and the hard palate. Late in the disease it may spread over the nose and destroy it.

Failures are usually due to inadequate dosage of irradiation or to too restricted field of treatment or to incomplete surgical removal.

The author prefers fractional doses of radium over a six-day period until each area has received 150 to 350 milligram hours per square centimeter with a total dose often ranging from 2,000 to 3,000 milligram hours. Lines of possible spread are included in the fields of treatment.

In recurrent and resistant cases the above doses may have to be repeated in four to five months. They prefer electrocoagulation and plastic operation later to radon seeds. Roentgen rays with high filtration have been successfully used.

SUMMARY

(1) Epitheliomas of the nasolabial fold are slow growing, but once disturbed by abortive or inadequate treatment are progressive and destructive. They extend along the lines of embryological development.

(2) Protracted, fractionated radium therapy given at a distance is the method of choice, but the treatment must be given over a fairly large area. Protracted roentgen therapy will give similar results.

(3) In recurrent carcinomas, the possibility of success is dependent upon the presence or absence of necrosis of cartilage and bone, which is secondarily infected.

(4) Where adequate irradiation is not followed by healing, electrocoagulation, followed by plastic reconstruction at a later date, is advisable.

SURGERY—GENERAL AND ABDOMINAL

By **Battle Malone, II, M.D.**
1400 Monroe Avenue, Memphis

Treatment of the Ruptured Appendix. Charles F. Nassau, M.D. Surgical Clinics of North America, December, 1937.

The mortality of appendicitis in the United States is not decreasing. Perforation is often the result of the patients having taken a laxative. Perforation following purgation results in a poorer operative risk than natural perforation.

The time for operation after perforation is discussed. It is the practice of the author to operate in all cases except in those showing a silent abdomen or who are practically moribund. In this type of case with rigid, distended abdomen absent, peristalsis and extreme sepsis, the Oschner treatment is carried out. However, the indiscriminate use of the delayed operation in acute appendicitis may do great harm.

The McBurney incision is chosen except occasionally in women, when a right rectus or midline is used. In the operation it is unnecessary to expose a great area of large or small bowel, and any loops of small intestine appearing in the wound are tucked out of sight by a small gauze pack. Suction is used to remove pus and peritoneal fluids. The appendix should always be removed if possible. If circumstances are unfavorable for removal of the appendix and the procedure would add to the hazard of the operation, one should not persist in the attempt. Simple ligation of the base of the appendix with removal will usually suffice. Purse-string inversion is unnecessary. Any fecal concretions present should be removed. The wound is left completely open in all badly-infected cases.

The proper placing of drainage tubes is important. A dressed drain is placed along the lateral pelvic wall into the pelvis. The drain is made by loosely wrapping iodoform gauze around a gum rubber tube in which perforations have been made, and this is loosely packed around the drain. A large cigarette drain may be placed along the outer side of the ascending colon if pus is present there. This provides adequate drainage, and fecal fistula is a rare complication.

Postoperatively, morphine is given in doses sufficient to keep the patient comfortable, but never to the extent of complete narcotization. Liquids by mouth are withheld, and 2,500 to 3,000 cubic centimeters of fluids are given parenterally in the first twenty-four hours and 2,000 cubic centimeters daily after that time. Care is used not to overload the patient with chloride, which produces edema. If hypodermoclysis is used, it should never be given in the thighs. Small transfusions may be useful in very septic patients. Some of the packing is removed every other day, and the dressed drain is completely removed on the fifth or sixth postoperative day. It is replaced by a gauze which is to prevent the formation of residual abscess. Usually the wound is free of drainage by the fourteenth to the sixteenth day. Patients in whom gauze packing has been used must never be given laxatives.

Wangensteen suction is employed where there is distention. Food is withheld until the patient is passing gas, and the temperature and pulse are approximately normal. A one, two, three enema is usually given about the fifth day.

If the appendix has not been removed and only drainage done, an appendectomy should be performed after about six months.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.
By G. A. Williamson, Jr., M.D
Medical Building, Knoxville

A Follow-Up Study of Thirty-One Cases of Acute Urinary Infection in Female Children. Lawrence R. Wharton, M.D., Lamam A. Gray, M.D., Southern Medical Journal, January, 1938.

Upper urinary tract infections in children are usually treated symptomatically, and, with relief of symptoms, are dismissed without further investigation to determine the ultimate results.

Analysis of thirty-one young adults, who had previously had pyelitis in infancy or childhood, were studied to determine the ultimate results.

The average time since an attack of acute pyelitis was 9.7 years. Examination included history, general physical examination, urinalysis with cultures, function tests, and intravenous pyelographic study.

At the time of examination, many had no symptoms and had enjoyed good health for ten years.

Urological abnormalities were found in fifty-eight per cent. Urine cultures were positive in fifteen of thirty-one cases. Renal and ureteral calculi were found in one case each. Abnormalities, varying from dilated ureter to hydronephrotic kidney, were found in eleven cases. There was impairment of renal function in eight cases.

History of impairment had apparently only affected two cases as far as general health was concerned. The number of previous attacks had no relation to the pathology found.

Three of the patients had gone through pregnancy, during which time one developed a pyelitis, one an albuminuria, and the third had a normal pregnancy. There were no congenital abnormal findings in any group patients.

No relation could be found to indite a focal infection as causative of introducing pyelitis in childhood.

The authors emphasize the value in careful observation of these cases until all infection has subsided, and the abnormalities corrected.

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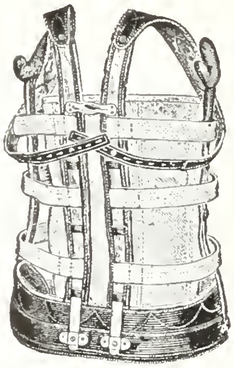

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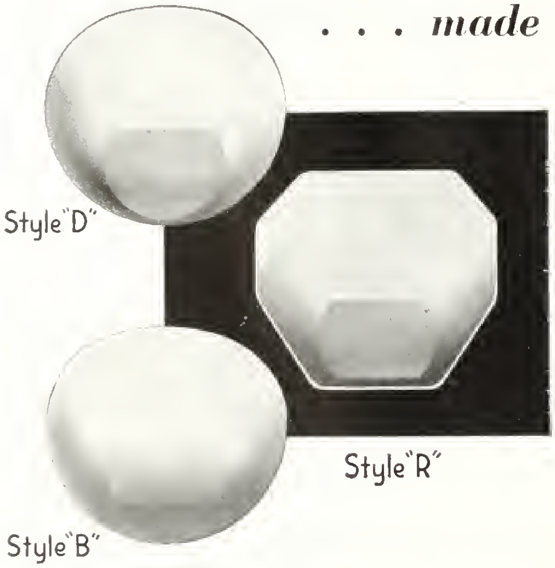

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THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE
ISSUED MONTHLY, Under Direction of the Trustees

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OFFICE OF PUBLICATION, 508 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXXI MARCH, 1938 No. 3

WHAT SHOULD THE PUBLIC KNOW ABOUT SYPHILIS*

E. GURNEY CLARK, M.D.,** Nashville

BECAUSE OF differences of individual interpretation there may be some question as to the extent to which the general public should be informed about diseases. There is, however, no doubt as to the source from which this information should be dispensed.

Since the control of syphilis lies in the early and adequate treatment of infected persons and since treatment is a function of the profession, it appears that information, education if you like, that will induce more infected persons to take and continue treatment should come from the medical profession.

At the request of the House of Delegates of the Tennessee State Medical Association, an outline of treatment for uncomplicated syphilis prepared by the Liaison Committee of the association in cooperation with the Tennessee Department of Public Health has been distributed throughout the state. Each local society has been asked to devote one meeting to a program on syphilis. When requested, speakers have been furnished by the Liaison Committee and the State Department of Health, and every effort has been made to stimulate the local profession to instigate and sponsor educational measures along the lines of syphilis control. However, before we who would educate the public set out to present them with salient facts, we should take the first logical step—educate ourselves.

Is our attitude toward infected individuals any more tolerant than that of the public we would educate? Have we learned as much about syphilis in proportion to the information available as we have about other diseases? Do you think of syphilis as a venereal disease entirely? If we do, how do we propose to convince the public, to whom venery is synonymous with sin, that syphilis is so often not a venereal disease? That the terminology used does make a difference is shown by examples presented by Dr. N. A. Nelson of Boston. He first tells the story of the genealogist who, when he found that the immediate forebear of a prominent Boston lady had been electrocuted in the state penitentiary, had to dress up his report in the following manner: "Your uncle, madam, occupied the Chair of Electricity in one of the state's leading institutions." The lady was satisfied because the rose seemed sweeter by another name. When it became apparent that sufferers were not being consumed and eaten away by a deadly disease, that the disease could be cured and even prevented, it was thought to be ridiculous to refer to it as consumption; thus, with the advent of the word tuberculosis which signified nothing so horrifying as consumption, sanatoria were built, living conditions were improved, and the death rate of tuberculosis declined. Thus, another rose seemed sweeter by another name.

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*Prepared at the request of the Liaison Committee of Tennessee State Medical Association for use as source material for lay educational talks on syphilis.

**Epidemiologist and Assistant in Clinical Medicine, Syphilis Clinic, Vanderbilt Medical School. Clinical and Epidemiological Consultant, Tennessee State Department of Public Health.

Similarly, we have a disease that kills, paralyzes, and blinds innocent babies, a disease that can be transmitted to innocent wives or husbands, a disease that can be transmitted by a drinking cup, a pipe, or a cigarette, a disease that we speak of as a venereal disease. Knowing that the word venereal is derived from venery, meaning of, or pertaining to, sin, lasciviousness, or illicit sexual relationship, can we rationally place these unfortunate children, the innocent bride or bridegroom, and other innocently infected individuals in this group of outcasts? It has been authoritatively estimated that one-half of all the persons who have syphilis fall into this group—free of sin, free of shame, free of immoral conduct. If we are ever to make any progress in the control of syphilis, people must be taught to remove from it the connotation of immorality that it has had since antiquity. Dr. Nelson has suggested the word "genito-infectious" diseases as a substitute for the old so-called "venereal" diseases. In this case a disease by another name may seem less disgraceful.

With the adoption of new attitudes, came a fall in the death rate of tuberculosis (all forms) in Tennessee from 198.2 per 100,000 persons in 1917 to 92.1 per 100,000 in 1936. Attention to the typhoid fever problem—sanitation, privy building (would Chic Sale have been well received in 1905?)—has reduced the typhoid death rate from 36.6 in 1917 to 5.3 per 100,000 Tennesseans in 1936. But "nice people" do not have syphilis (a disease that makes children blind) because "nice people" do not talk about syphilis (a disease that affects innocent brides), and because "nice" people do not do anything about those who have syphilis, the death rate of syphilis has risen instead of fallen during this same period of twenty years.

The following material is suggested as content for talks on syphilis to lay groups.

It has been estimated that better than ten per cent of the population is infected or will be infected with syphilis. This figure is arrived at from facts gleaned from surveys over the United States. Each year more than 518,000 seek treatment for the first time from physicians for syphilis. (Seventy-one per cent of these after the disease has become chronic.) It is known that less than half of white persons infected with syphilis and no more than ten to fifteen per cent of infected negroes seek treatment for syphilis, consequently, an estimate of one million new cases each year in the United States would be a conservative one. At this rate, so short a period as twelve years would be all that is necessary to infect ten per cent of the population of this country.

In 1937, according to morbidity reports, there were 9,417 new cases of syphilis in the State of Tennessee. This represents an increase of thirty-five per cent over the reported 6,968 cases in 1936. However, surveys made in Nashville, Memphis, and Knoxville and in several rural areas indicated that there were at least 8,924 additional new cases that were not reported during the same year (1936). There are then at least 15,000 new cases of syphilis in the State of Tennessee each year. Approximately ninety-five per cent of the reports of cases of syphilis come from counties and cities having full-time health services, and the remaining five per cent of the reports come from areas containing one-third of the state's entire population living in counties without full-time health service. Consequently, if the incidence of syphilis is as high in counties without health departments as in those with health departments, an additional 3,000 cases must be added to the expected number.

It is generally believed that other diseases are reported more accurately than is syphilis. Even so, there are reported far more cases of syphilis than of other infectious diseases. In Tennessee in the past ten years there were reported

52,683 more cases of syphilis than of smallpox
54,545 more cases of syphilis than of polio
41,817 more cases of syphilis than of typhoid fever
41,427 more cases of syphilis than of diphtheria
39,533 more cases of syphilis than of chicken pox

36,303 more cases of syphilis than of whooping cough
33,224 more cases of syphilis than of scarlet fever
30,655 more cases of syphilis than of pneumonia
25,598 more cases of syphilis than of tuberculosis

Over this ten-year period there were reported almost twice as many cases of syphilis as of tuberculosis; almost four times more syphilis than typhoid fever; more than twice the number of cases of scarlet fever; more than forty times the number of cases of poliomyelitis; more than twice the number of cases of pneumonia; almost four times the number of cases of diphtheria. The same type of comparative morbidity is apparent from year to year. In 1937 there were almost three times as many cases of syphilis reported as of tuberculosis; thirteen times as many cases as of typhoid fever; seventy-five times the number of poliomyelitis cases reported. There were reported as many cases of syphilis as of tuberculosis, typhoid, smallpox, scarlet fever, poliomyelitis, diphtheria, and pneumonia combined. In 1936 poliomyelitis held the press, the greatest epidemic of infantile paralysis in the history of the state. At the same time, in persons under twenty, cases of syphilis exceeded those of poliomyelitis by 448.

Infantile paralysis is always a source of great concern. In Tennessee in the past ten years it has been responsible for the death of 276 children under ten years of age, eighty-three of whom were under one year of age. During this same period of time, syphilis was recorded as the cause of death of 587 children in this same age group, 584 of these were under one year of age. There were many other children who died as the result of syphilis unrecognized as such. There are many others who lived —paralyzed, blind, feeble-minded, or with other stigmata of congenital syphilis.

In the past ten years 1,631 deaths have been attributed to locomotor ataxia and general paralysis. It can be conservatively estimated that twenty per cent, or 7,298, of the 36,490 deaths from heart disease were due to syphilis. In the ten years prior to 1936 the State of Tennessee spent more than $268,000 caring for persons with general paresis and locomotor ataxia in the state institutions, more than enough to purchase drugs to treat adequately all of the cases of syphilis reported during that same period of time. Even of greater concern is the estimation of life-years lost. It is estimated that each death from syphilitic heart disease represents a loss of from nineteen to twenty-three years of life, and that each death from paresis represents a loss of twenty-two years and locomotor ataxia fourteen years. The morbidity findings of these past ten years indicate the loss of 142,000 life-years without giving any consideration to the loss of life-years due to other forms of disabling syphilis, congenital or otherwise. What are these 142,000 years of life worth in dollars and cents? What would it be worth to save them? Add to this enormous loss the cost of treatment, hospital care, relief due to disability of family head, loss to employer, etc. Add also the cost of accidents due to mental changes of syphilis. Add also the waste of money that goes to quacks. These items and many more represent the cost of syphilis.

Deaths reported as due to syphilis no more express the actual mortality from syphilis than cases express the actual morbidity. Many deaths from cerebral hemorrhage, meningitis, heart disease, diseases of the liver, hardening of the arteries, etc., are due to syphilis and are not recognized as the underlying cause. Dr. Osler was convinced that syphilis was the chief cause of death. If there is added to the number of deaths attributed to syphilis deaths due to aneurism, the deaths due to cerebral hemorrhage in persons under forty-five years of age, twenty per cent of the deaths due to heart disease, and about ten per cent of the stillbirths, a more nearly correct, though decidedly conservative, idea as to the number of deaths due to syphilis may be obtained. Using the information gained from this type of analysis, it is found that 17,266 deaths may be attributed to syphilis in the past ten years. This represents three times the number of deaths attributed to automobile accidents in this state. It is eight times the number of deaths caused by typhoid fever, nine times the number of deaths attributed to diphtheria, and sixty times the number of deaths reported as caused by infantile paralysis.

What are we going to do about syphilis—this plague that disables 18,000 Tennesseans a year, this plague that does a thousand times as much damage as the dreaded infantile paralysis, this plague that is wrecking lives, shattering homes, and filling institutions with its insane, blind, feeble-minded, or unemployable victims? We could virtually stamp out this disease if we were not hampered by the widespread belief that nice people do not talk about syphilis and that "nice" people should not do anything about those who do have syphilis.

We have at our command a drug, arsphenamine, which, if used properly and over a long enough period of time, allows us to assure those in the early stages that cure is possible. After the disease has been present for a number of years and has spread to all parts of the body, the only assurance we can give is that with many months of treatment we in all probability will be able to arrest the progress of the disease. The most favorable case requires a year or eighteen months of constant weekly treatment.

What of the immorality of syphilis? Syphilis is by no means invariably synonymous with sin. The National Health Council says that two per cent of all children in the United States were born with that disease. It is well known that among every hundred people who have syphilis ten will be found who were born with it. It is also well known that if all the women who have syphilis could be adequately treated, at least during pregnancy, no more children would be born with this disease which makes them blind, deaf, feeble-minded, insane, and cripples or kills them before they are born. Can we place the badge of sin and shame on the brides innocently infected by husbands who thought they were cured before marriage? Fully fifty per cent of all the individuals infected with syphilis received their infection innocently. Many are infected by the use of a drinking cup, a towel used immediately before by an infected individual, in receiving services from a diseased barber or beauty shop operator, and by other forms of innocent contact. Dr. Parran cites an instance where seventeen cases of syphilis were traced to a party where kissing games were played.

Syphilis is caused by a germ that travels through the blood, capable of destruction of any part of the body if not treated promptly and properly. If it is untreated or improperly treated, it develops, usually in three stages.

The germs go through the skin at the point of inoculation, not requiring a broken skin. After rapid multiplication, they pass into the blood and to all parts of the body. Two to six weeks later a sore appears at the point of entrance, the first stage of syphilis, and may be of any size from a pimple or "cold sore" to a large ulcer known as a chancre. Many chancres, especially in women, are never noticed, and syphilis may be discovered only when the later stages appear or a blood test is made. The sore may heal without treatment, and the patient unfortunately thinks that the disease is cured.

A few weeks later some or all (or none) of the second stage symptoms appear—such as skin rashes, canker-like sores in the mouth, headache, fever, pain in the bones, falling hair and eyebrows. The sores in the mouth or on other moist surfaces contain thousands of germs and are highly infectious.

Whether treatment is started or not, these second stage symptoms will disappear, and unless properly treated, may return several times, each recurrence causing more damage than the others. Sometimes the symptoms of this stage of the disease are so mild that they are hardly noticed, but the final outcome of the disease, if improperly treated, is just as serious in these cases as in those with marked symptoms. Years later there may develop locomotor ataxia, general paralysis of the insane, or other forms of syphilis of the brain, nerves, heart, blood vessels, bones, eyes, liver, or any other part of the body.

What do we hope to accomplish by educational measures?

1. To change the age-old idea that syphilis and sin are synonymous.

2. To have every pregnant woman examined for syphilis. We know that congenital syphilis can be prevented. The importance of routine Wassermann examination of all pregnant women is shown by a survey made in an eastern state. In one group of hospitals, blood for Wassermanns was drawn only on those women who had something suggestive of syphilis; twelve cases in 19,411 pregnant women were found. In another where all admissions to the maternity service were examined for syphilis, 112 cases were found in 2,559 admissions. This is an incidence rate of more than forty-six per thousand. If the same procedure had been carried out in the former hospital, seven hundred cases would have been found, and seven hundred children could have been spared the risk of getting congenital syphilis. In Tennessee in the past ten years there have been 465,524 live births. If two per cent of all children born have syphilis, we have at least 9,000 cases of syphilis in this state that could have easily been prevented.

3. To have syphilis considered a communicable disease, not as a moral issue. One person in ten is affected. There are more cases than measles, more than tuberculosis, and a hundred times more than infantile paralysis. It is the cause of ten per cent of the insanity and eighteen per cent of all diseases of the heart.

4. To let our boys and girls know something of this devastating plague. Syphilis infection occurs most frequently in boys from twenty to twenty-one years of age. Two out of three women who contract gonorrhea do so before they are twenty-five years of age. Children are taught everything to fit them for life but how to meet life. How guilty are those who do not know?

5. To have our cooks and nursemaids all examined for syphilis and place them under treatment at once. Fire them? Not by any means! There is much less danger from the servant infected with syphilis who is constantly under treatment than from the servant who does not have syphilis and is likely to contract it and spread it through the household before it is detected.

Can anything be done about syphilis? In the Scandinavian countries, syphilis has become a rarity in the past ten years. These countries have a population less than that of New York State and have less than 1,600 new cases each year. In one month in 1935, 1,836 new cases of syphilis were reported in New York State. Sweden, with a population two to three times that of Tennessee, had only 431 cases of syphilis in 1934. Tennessee had sixteen times that number. Right now we are beginning just what Sweden did twenty years ago.

What should the public be told about syphilis?

Should the argument against syphilis always being a venereal disease be presented in order that cases hiding behind the century-old taboo would come out and seek treatment?

Should the public be told that ten per cent of them are infected so that the unfortunate patient will feel that he is not alone in his misfortune?

Should the word be spread that syphilis is a disease more prevalent than any of the other diseases, by thousands of cases, over a period of years so that everyone will be aware of its presence in every community?

Should they be told that untreated syphilis is a shortener of life so that those who need to be treated will continue their treatment to prevent heart diseases, paresis and tabes, to prevent loss of life-years?

Should they be told that cure is possible so that the infected ones will be given a ray of hope?

Should they be warned of symptomless infection, be told something of the cause of the disease in order that they will understand when the doctor wants to take a blood test?

Should the public know that congenital syphilis can be prevented, that syphilis is no respecter of social standing, or shall numerous children be born each year with syphilis?

Should everyone know that treatment takes more than a year, that disappearance of the sores does not mean cure, in order that quacks who indicate otherwise cannot thrive?

Shall we tell them or shall their information come from unreliable sources?

Finally, let us be warned—a proportion of the audience has had experience with syphilis. These must not be frightened, discouraged, or condemned. Present the facts with a ray of hope!

When the doctor talks about disease, the public listens!

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HYPERTENSIVE DISEASE: BASIC FACTORS AND MANAGEMENT*

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DURING THE PAST two decades, progress in diagnosis has outstripped progress in treatment in hypertension. Today the physician may make an accurate diagnosis and give a satisfactory prognosis in the majority of cases after a thorough history and physical examination with a minimum of laboratory work. If, in addition, he has access to an electrocardiograph, a metabolimeter, an ophthalmoscope, a fluoroscope, and to a clinical laboratory, the physician is able to diagnose better his difficult cases. But despite the fact that treatment is still on an unsatisfactory basis, the forms of therapy employed today are more rational than formerly, due to more adequate knowledge of the underlying disease mechanism.

The purpose of this paper is to aid the practitioner dealing with hypertensive patients by, first, outlining the approach best employed for the recognition of the different forms of hypertension; second, discussing the more important prognostic signs; and third, evaluating accepted forms of treatment that are most widely employed.

The physician faced with a new patient with hypertension knows that the most frequently encountered diseases responsible for the condition are essential hypertension, malignant hypertension, and nephritis. He finds it relatively easy to recognize the other diseases that cause hypertension because these diseases are far enough advanced for clinical recognition by the time hypertension makes its appearance. To mention a few of these diseases: thyrotoxicosis, toxemias of pregnancy, polycystic kidneys, lead poisoning, amyloidosis, uterine myomata, urinary obstructions, the whole group comprising not more than five per cent of all hypertensive cases.

Cases of transitory hypertension due to excitement or emotional upsets may be recognized during a single examination or after repeated examinations. In such instances, there is often difficulty in deciding if the case is not one of early essential hypertension.

For the clinical recognition of essential and malignant hypertension and nephritis in the patient, it is necessary that the clinician have knowledge of the basic factors at work in these diseases. Because of this, the fundamental clinical and pathological processes in these forms of hypertension are here reviewed.

Essential hypertension is the most frequent form of hypertensive disease, including more than eighty to eighty-five per cent of all cases. The onset is usually gradual during middle years, the disease becoming full-blown by the sixth decade of life. The course is chronic with gradually increasing pressure, averaging 200 millimeters systolic and 110 millimeters diastolic. Extremely high pressures occur in a few patients but by and large are not the rule. The duration of this disease averages five to ten years, the patient dying with myocardial insufficiency or vascular accidents. Many of the patients, however, live twenty years or more after the onset and die from other causes. Renal failure is rare.

The etiology of essential hypertension is unknown. Significant factors as to etiology are: the wide incidence of essential hypertension throughout the civilized world; the frequent onset at the menopause; the predilection of the disease for thickset, middle-aged individuals; the tendency for its occurrence in families; and the role of unpleasant emotions such as sorrow, anger, fear, and worry in its production. Of these factors, the ones related to heredity and constitution appear the most fundamental.

Whatever starts it, essential hypertension is first manifested by a general constriction of arterioles, more in the splanchnics than in the other areas, producing a narrowed vascular bed and higher intravascular pressure. With time, the affected vessels and the larger arteries become sclerosed. The left ventricle of the heart undergoes concentric hypertrophy and subsequent dilatation. Fibrosis also occurs in the heart muscle and may indeed be the predominant cardiac change. The coronaries are sclerosed in half of the cases, and cardiac infarction is frequent. The kidney arterioles are narrowed in the chronic cases, and the renal parenchyma is slightly granular and atrophic.

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*Read before the Tennessee State Medical Association, Knoxville, April 13, 14, 15, 1937.

Clinically, spasm of the arterioles in essential hypertension may be demonstrated on ophthalmoscopic examination. Indirect clinical evidence of vasoconstriction may be inferred from the sudden bouts of blood pressure elevations, with various associated clinical phenomena. Hypertensive encephalopathy is the term used to designate the cerebral manifestations of vasospasm. Practically every conceivable symptom and sign referable to brain dysfunction may occur. Particularly common are blindness, aphasias, coma, delirium, epileptiform convulsions, and signs of increased intracranial pressure. The spastic process in the coronaries causes angina; in the limbs, claudication; and in the abdomen, various pains. The vascularspasm, wherever it occurs, may be complicated by thrombosis or hemorrhage. Thus, cerebral apoplexy, cardiac infarction, peripheral gangrene, mesenteric thrombosis, and so on, often complicate the scene.

As myocardial insufficiency develops in essential hypertension, the resulting stasis in the kidney causes the appearance of albumin casts and red cells in the urine and the blood nonprotein nitrogen values become elevated. These findings disappear on the restoration of myocardial function, and therefore are not signs of kidney failure. In such instances, kidney function tests show adequate renal reserve.

Malignant hypertension, the second of the common forms of hypertension, is the diagnosis in about five per cent of patients with elevated blood pressure. Chief characteristics of this disease are: sudden onsets in individuals between forty and fifty years of age or younger, seldom older; excessive pressures progressively increasing, often to as high as 300 millimeters systolic and 180 millimeters diastolic; short courses, lasting an average of two years, fulminating in renal failure, myocardial insufficiency, and vascular accidents. The etiology and pathogenesis of malignant hypertension appear to be similar to essential hypertension, insofar as knowledge goes, and it is a moot question as to whether these two diseases are not one and the same entity, varying only in severity. Highly suggestive of this is that malignant hypertension sometimes complicates an established case of essential hypertension of long standing. Border-line cases, in which differentiation of the two diseases is difficult, are not infrequent.

In malignant hypertension, as in essential hypertension, spasm and sclerosis of the arterioles are the primary vascular changes. But here, in addition, there is widespread arteriolar necrosis giving rise to inflammatory changes. Clinical evidence of this inflammatory process in the kidney in malignant hypertension is shown in the urinary findings of red cells, albumin, and casts, and in the progressive diminution of kidney function, as determined by impairment of concentration power and high elevation of the blood nonprotein nitrogen values. Additional clinical evidence of the combined spastic and inflammatory processes in malignant hypertension is found on ophthalmoscopic examination. The eye grounds reveal hemorrhage and exudate in the retinae, in addition to spasticity and sclerosis of the arterioles. Occasionally, there is also swelling and redness of the nerve head.

Nephritis is of a different etiology and pathogenesis than essential and malignant hypertension. Focal infection and acute infectious diseases due to bacterial agents, most often the streptococcus hemolyticus, are the initial excitants. The first kidney change is inflammation of the glomeruli. The blood pressure becomes elevated as a reflex response to the kidney injury, and general arteriolar sclerosis and cardiac enlargement develop as the high pressure is maintained. The end results thus are comparable to essential and malignant hypertension. Another characteristic of nephritis is the presence of anemia, often of a severe degree.

Younger individuals are more often affected than older ones. The disease seldom appears after the fourth decade of life. The course is acute, subacute, or chronic. Acute and subacute forms often subside. Chronic forms are characterized by exacerbations and remissions, and recovery from them is rare. The blood pressures do not average as high as in essential and malignant hypertension, but exceptions as to this are not infrequent. The eye grounds are similar to those found in malignant hypertension. The urine characteristically contains blood cells, albumin, and casts. Albuminuria may be so extreme that plasma protein deficiency develops, giving rise to remarkable degrees of edema.

As nephritis advances, kidney function becomes impaired. Loss of ability to concentrate urine is probably the earliest indication of impaired function. In the end stages of nephritis, the kidney is altogether unable to concentrate urine, the urinary specific gravity becoming fixed in the neighborhood of 1.010. In the acute and subacute cases of nephritis, the blood nonprotein nitrogen values may become elevated before the kidney's power to concentrate urine becomes impaired. Not so in the chronic cases; the opposite holds true. Death in nephritis is most often due to uremia. Vascular accidents and heart failure terminate the minority of the cases.

Ordinarily, there is not much difficulty in differentiating essential hypertension, malignant hypertension, and nephritis in the patient. Careful consideration of the history and the findings, physical and laboratory, suffices for a correct interpretation in most patients when first seen. Seldom is essential hypertension mistaken for the other two diseases. Differentiating malignant hypertension and nephritis may perplex the ablest. The physician may have to observe certain patients over long periods of time before such a differentiation is possible. Occasionally the diagnosis is clinically impossible, and the secret awaits autopsy.

Considered from practical aspects, diagnosis is not so important, particularly from the patient's standpoint, as are therapy and prognosis. The physician, therefore, does better by holding constantly in mind the prognostic signs as they occur and by attempting to control the excessive pressure and its complications than by devoting too much study and time to the diagnostic problem at hand.

In formulating a prognosis for the hypertensive patient, it is easier to foretell the unfavorable than the good prospects. That pressures above 250 millimeters systolic and 130 millimeters diastolic are attended with constant danger and that sudden fluctuations in such cases aggravate the seriousness the physician well knows. But given a patient with the findings of essential hypertension without greatly elevated pressure or other complications, there is no way to predict the outcome. The physician in such a situation best resorts to averages and tells the patient that with good care he may live ten or twenty years. The danger signs especially to be watched for in hypertensive patients are in the eye grounds, the cardiac and central nervous system manifestations, the kidney function, and the character of the blood pressure. These danger signs are seldom present, one without another. Thus, bouts of blood pressure elevation may be associated with hypertensive encephalopathy, angina pectoris, myocardial insufficiency, positive eye grounds, and so on.

Ominous cardiac developments are congestive failure, angina, paroxysmal dyspnea, and pulsus alternans. The earliest warnings of a weakening myocardium are cardiac enlargement and angina. Concentric hypertrophy of the left ventricle, the initial cardiac change in hypertension, is difficult to detect on physical examination. Fluoroscopic examination here may be of aid, but the most reliable method for the detection of concentric hypertrophy is the electrocardiograph, the tracing revealing left axis deviation. As the myocardium weakens, dilatation occurs and cardiac enlargement may be demonstrated by physical examination and fluoroscopic visualization.

Additional abnormalities in the electrocardiographic tracing indicative of myocardial weakness are: widening of the up-and-down strokes of the ventricular complex, low voltage, inverted T waves, and the various forms of heart block.

Predicting vascular accidents in hypertension is uncertain. The amount of sclerosis in the eye grounds and peripheral vascular system is not a reliable prognostic criterion. Patients who have had strokes of apoplexy or attacks of coronary thrombosis are prone to recurrences.

The presence of hemorrhages and exudate in the eye grounds in hypertension predicts a stormy course for the patient, to terminate within two years in uremia, heart failure, or in vascular accidents. With the onset of uremia, death is a matter but of days or weeks, or at most, months. With the onset of myocardial insufficiency or angina, there is more hope, for with proper management, normal heart function may be temporarily restored.

In treating the patient with hypertension, whatever the cause, it is wise to heed Houchard's dictum: "The treatment of hypertension is a regimen, not a drug." Correction of obesity, adequate mental and physical rest, and other general measures are beneficial.

For control of excessive blood pressures, there is no specific. Countless drugs have been recommended. To mention a few: the zanthine diuretics, nitrites, sulphocyanates, bismuth subnitrate, liver extract, extracts of mistletoe, extracts of watermelon seed, ovarian extract, and papaverine. Nearly all of these agents have been found of value in selected cases when used in conjunction with sedatives. For want of better explanation, it is probable that these measures produce lowering of blood pressure through the powerful role played by suggestion and psychotherapy on the sympathetic nervous system.

The type of hypertensive patient who best responds to these various forms of treatment is the one without positive eye grounds, vascular accidents, myocardial failure, uremia; in other words, the patient with early essential hypertension. In my experience, the administration of ten per cent sodium chloride intravenously in amounts varying from fifty cubic centimeters to 150 cubic centimeters, two or three times weekly, lowers the blood pressure in this type of patient, when sedatives and other general measures are used.

Selection of a sedative rests in the physician's choice and the patient's reaction. Bromides or milder barbiturates used alone or in combination with one of the zanthine group are the most satisfactory in the largest number of cases.

Selection of a diet rests along similar lines. A minimum diet with bed rest frequently is effective in patients with high pressures, particularly when the pressures are fluctuating.

Cardiac complications in hypertension are managed as they appear. Cardiac thrombosis, angina pectoris, and cardiac decompensation are treated the same in hypertension as elsewhere. Tonic doses of digitalis before the occurrence of myocardial insufficiency is claimed by Christian[1] to be of value. Acute left ventricular failure with its paroxysmal dyspnea and pulmonary edema sometimes responds to bloodletting, or to the application of tourniquets to the extremities, when other measures have failed.

The management of uremia in hypertensive diseases is always discouraging. Dehydration by concentrated glucose or sucrose solutions and spinal tappings may be of benefit. The same measures often prove valuable in hypertensive encephalopathy.

Control of nervous symptoms in hypertension may provoke the physician as well as the patient; in particular, the early morning headache, vertigo, and tinnitus. These symptoms may disappear as the blood pressure becomes lowered.

The value of surgery in hypertensive diseases remains sub judice. Operations now advocated in the various medical centers are, first, adrenal denervation and subtotal adrenalectomy; second, section of the lumbar sympathetic chain and removal of the upper lumbar ganglia. In early cases with labile pressures, these procedures may have merit, but it is too early to determine their eventual value to the patient.

Diligent searches for foci of infection are worth while in managing cases of hypertension. Occasionally infected teeth, tonsils, or some other focus act as triggers to set off a bout of blood pressure elevation, and removal of the focus is followed by gratifying improvement.

CONCLUSION

Notwithstanding the unsatisfactory state of knowledge of hypertension as to its etiology, mechanism of production, and management, it behooves the physician to study thoroughly the cases that he sees and to employ forms of treatment that he or others have found beneficial. Too often the physician dismisses the whole question with: the etiology is unknown; the treatment, unsatisfactory.

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DISCUSSION

DR. JAMES L. BIBB (Chattanooga): Mr. Chairman, I want to congratulate Dr. Ching on his very excellent paper. No one could possibly cover the subject in his allotted time. Mark Twain once said, "Everybody talks about the weather, but no one does anything about it." Likewise with hypertension, we all talk about it, but no one does anything about it, that is nothing which is really effective.

Hypertension has been characterized by its resistance to treatment, and we have reasoned falsely that it is a symptom and not a disease, and therefore should not be treated, and even that danger might attend lowering it. However, since high blood pressure may result in death, it is highly desirable that we lower it permanently if possible, especially in certain types, and therefore we have to call on our surgical friends in these types for sympathectomy or what not.

Much effort has been made lately to classify man into constitutional types and to associate certain disease entities with one type of constitution or another. This applies very nicely in essential hypertension, for the mechanism of hypertension is certainly better understood now. It is essentially, as Dr. Ching says, a spasm of the arterioles throughout the body. These people have a constitutionally increased neuromuscular tonus of the arterial system. The converse helps to prove this.

In a study of 144 cases at one of our large clinics, of spontaneously acquired hernias, those in which trauma played no part, there were almost no cases of hypertension. These patients showed a definite generalized low tissue tonus.

You are familiar with George Brown's ice water pressor test for measuring reactability of blood pressure. Immerse the hand to just above the wrist in ice water and the reaction in normal persons in thirty seconds is under fifteen millimeters of mercury, whereas those having hypertension show a much higher rate. Especially constant was the rise in the diastolic pressure. This test is believed valuable in determining potential hypertension, especially among hypertensive families, even though at the time they may show a normal blood pressure when the test is tried.

The importance of hypertension in reducing life expectancy is being stressed. Thirty millimeters higher than the average doubles the ratio of actual to expected deaths at that age, while an increase of fifty quadruples the ratio, and the hazard is more one of coronary disease than of cerebral hemorrhage. The diastolic pressure is more important than the systolic. Ninety is suspicious, ninety-five definitely pathologic, and a reading below fifty-five suggests a cardiovascular abnormality, and of course the most deadly of all is the coexistence of a low systolic and a high diastolic.

Seventy per cent of individuals with hypertension develop myocardial insufficiency and die of heart failure. Therefore it is important to consider the heart.

The hypertensive heart fails for two reasons: first, it carries a much greater load and therefore becomes exhausted; second, because of sclerosis of the coronaries the blood supply is impaired, there is a faulty tissue metabolism of the muscle cells of the myocardium, with consequent destruction of cells and replacement with fibrous tissue in the heart, giving rise to the term myocardiosis, not myocarditis. Later the process manifests itself to us as an angina or a gradual progressive congestive failure.

Often in early stages the patient hardly notices slight dyspnea on exertion, mild attacks of nocturnal paroxysmal dyspnea, wrongly called bronchial asthma, or a puffiness about the ankles wrongly called kidney disease. At this stage rest in bed and moderate doses of digitalis and sedatives will probably save the patient a more serious breakdown.

The therapy of hypertensive heart disease may be considered under two headings: (1) treatment before failure develops; (2) treatment with failure. The patient's life expectancy will be determined by the capacity of the heart to stand the strain, and all factors known to influence blood pressure should be considered. They should live on a lower plane of activity, especially curtailing the three E's—exercise, emotion, and eating. Obesity should be corrected and mental strain relieved.

Remember, in treatment you are dealing with hypertension, and in acute failures, as Dr. Ching so nicely mentioned, especially in left-sided failures, as in cardiac asthma with acute edema of the lungs, take the load off of the left ventricle. We forget to give these patients nitroglycerine, which so often helps. Just recently I saw a case of nocturnal paroxysmal dyspnea, and patient was struggling for breath, with pink froth from the mouth. A hypodermic of morphine was given, and the patient was expected to get relief, but did not. The blood pressure was taken, and it was found to be 200. A nitroglycerine tablet under the tongue in two minutes changed the whole picture.

Hypertension with definite congestive failure should be treated just as any other heart failure, removing edema from the tissues as quickly as possible, remembering that edema itself causes trouble. A few blood cells in the urine mean a leaking of an occasional glomerulus, and it is perfectly safe to give these cases salyrgan. Ammonium chloride is much more effective if given intermittently. Give three days, rest three days, and give some xanthine base in those three rest days.

DR. R. E. CHING (closing): I want to thank Dr. Bibb for discussing the paper. I think his remarks were very timely.

I have thought in the past few days just what I have accomplished in writing a paper like this on hypertension, because practically all of it is known. I am not giving you any new ideas on it, but I did a great deal of reading on it, and as I see a good many of these patients, I perhaps have gotten more good out of writing it than you have in hearing it.

There are a number of things that I brought out that I think might be reemphasized, and one is the acute cardiac asthma that Dr. Bibb referred to. The application of these tourniquets up near the trunk in these acute seizures of shortness of breath is remarkable in most of the cases. You put the blood pressure tourniquet onto the two arms and the two legs and pump up the pressure to just above the diastolic pressure and this allows blood to accumulate in the extremities and the extremities to short circuit the circulation, and if there is any cardiac reserve, it is going to be shown at this time. I have seen it work time after time. In patients who are blown up and waterlogged and have marked general dependent edema, this procedure is not of much value in my experience.

TENNESSEE STATE MEDICAL ASSOCIATION

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Headquarters

APRIL 12, 13, 14

THE RELATIONSHIP BETWEEN WATER BALANCE AND INTRACRANIAL PRESSURE*

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THE REMARKABLE advances in the progress of neurological surgery during the past two decades have been due in no small measure to the better understanding of the physiological factors involved in the maintenance of normal intracranial pressure and of the result of its pathological alterations.

During this time there has developed an increasing tendency to rely on nonoperative methods for the reduction of increased intracranial pressure provided the causative lesion is not of the nature demanding surgical intervention. The plan most universally used at present is the so-called "dehydration" method, in which the underlying principle is the reduction of intracranial tension by limiting the total intake of fluids and abstraction of cellular and intracellular fluids of the brain by the use of hypertonic solutions.

NORMAL INTRACRANIAL PRESSURE

Pressure within the cranial cavity consists of arterial, venous, and sinus blood pressures and the pressure of the cerebrospinal fluid. These pressures bear a definite relationship to each other, which varies greatly under different circumstances. The closer relationship exists between the pressure in the veins and sinuses and that of the cerebrospinal fluid, the cerebrospinal fluid being influenced in the same direction as that of the venous pressure, particularly on the side of an increase. This relationship is clearly demonstrated in the normal prompt rise of the cerebrospinal fluid pressure when the venous pressure is increased by jugular compression in the performance of the Queckenstedt test.

The cerebrospinal fluid pressure in the lumbar region equals that of the cranial cavity when registered with the patient in a horizontal position. For practical purposes the intracranial pressure is registered with a manometer attached to a needle inserted into the lumbar subarachnoidal sac. This equality of pressure exists only when there is no obstruction to the free flow of fluid between the cranial subarachnoidal cavity and that of the lumbar spinal sac.

The normal cerebrospinal pressure averages 130 millimeters of water or ten millimeters of mercury. The water manometer is more accurate and is much simpler to use.

Normally intracranial pressure is maintained by a balance between production and absorption of the cerebrospinal fluid. The continuous slow movement of cerebrospinal fluid from the point of formation to that of absorption has been termed by Cushing "the third circulation." The fluid is produced by the choroid plexuses situated largely in the lateral ventricles. From these cavities it circulates through the third ventricle downward through the aqueduct of Sylvius to the fourth ventricle, where it escapes through the three foramina in the roof of the ventricle into the basal subarachnoidal cisterns. From these basal reservoirs it passes upward through the various radicals of the subarachnoidal system, coursing along the cerebral sulci over the surface of the hemispheres where absorption takes place. This absorption into the blood stream takes place through the arachnoid villi, tufts of which project into the larger venous channel and blood sinuses. Any disturbance in the normal balance between production and absorption results in an abnormal intracranial pressure. Overproduction of fluid or diminished absorption produces an increased pressure, resulting in the appearance of signs and symptoms which vary with the degree of pressure and with the rapidity of onset. In the problem of reducing this increased fluid pressure a lowered water balance becomes an important factor.

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*Read before the Tennessee State Medical Association, Knoxville, April 13, 14, 15, 1937.

CAUSES OF INCREASED INTRACRANIAL PRESSURE

The chief causes of abnormal intracranial pressure are intracranial hemorrhage, abscess, neoplasm, edema, and obstruction from acute or chronic inflammatory changes in the subarachnoidal system. Many of these conditions are definitely surgical and present clear-cut indications for operative intervention. However, the problem of controlling intracranial pressure remains following the operative procedure. Intracranial hemorrhage may be of sufficient quantity to increase the pressure by its volume alone. Recent experimental work of Parker and Lehman indicates that blood in the cerebrospinal fluid interferes with its absorption by reason of the increased osmotic pressure due to the presence of blood proteins. The osmotic pressure is elevated to a point more nearly equal that of the blood into which absorption should take place. Tumors or abscesses may produce increased intracranial pressure by their presence alone, or by blocking the normal cerebrospinal fluid circulation. However, we should keep in mind the fact that neoplasms due to their infiltrating character, or the fact that their bulk may project into a ventricular cavity, may attain enormous size without producing an increase of intracranial pressure. Edema, the result of trauma, or as a complication of other intracranial lesions, is one of the most important factors in the production of acutely increased intracranial pressure. It may be a part of the general edema associated with constitutional disturbance, such as uremia or the so-called wet brain of alcoholism, etc. Edema, following injury or operative procedure, usually reaches its height in twenty-four to forty-eight hours. If of moderate degree, interference with absorption of cerebrospinal fluid will be correspondingly slight. However, if the edema is more severe and widespread in its extent, the general effect will be more serious.

THE EFFECTS OF INCREASED INTRACRANIAL PRESSURE

The increased intracranial pressure may be acute in onset as from injury, hemorrhage, etc., or of slower onset and longer duration when due to brain tumor, abscess, etc. The slower progress of the intracranial pressure increase permits a greater physiological adjustment to meet the situation. The chronic conditions are more often dealt with by the neurological surgeons. The general surgeon is more frequently concerned with the management of the patient following head injury.

The effect of the acutely increased intracranial pressure in the last analysis is the starvation of brain tissue due to the lack of oxygen (anoxemia). In traumatic cases the spread of edema and accumulation of cerebrospinal fluid continues to elevate the pressure, producing a venous stasis and narrowing of the venous sinuses. When the pressure approaches a point where it equals the arterial blood pressure, medullary symptoms appear, due to anemia of the brain stem. The anemia stimulates the vagus (cardio inhibitory), decreasing the pulse rate and the vasomotor center increasing the blood pressure. The respiratory center is not stimulated when anemic, and its responses are influenced by still other factors dependent upon the chemistry of respiration.

When intracranial pressure attains higher levels, the medullary centers eventually lose their ability to compensate, the blood pressure drops, the heart rate becomes more rapid and respiration ceases. If artificial respiration is maintained, the heart may continue to act over long periods of time, even twenty-four hours or more.

METHODS OF REDUCTION OF INTRACRANIAL PRESSURE

Given a patient with evidences of acutely increased intracranial tension, our chief concern is the reduction and maintenance of an intracranial pressure which is compatible with an intracranial blood flow adequate for nutrition of brain tissues.

Any one or all of three methods may be employed in effecting this reduction of pressure, viz., spinal or ventricular punctures, dehydration, and operation. That intracranial pressure can be lowered by these methods is unquestioned, but surgeons differ as to which method is most effective with least danger to the patient.

Lumbar puncture has its advocates, since it effectively lowers the pressure and removes bloody fluid. Its use is not without danger, due to choking of the brain stem at the foramen magnum and the incisura tentori, when pressure is suddenly released from below. Some writers believe the sudden lowering of pressure by puncture produces irritation and congestion with resulting increase in brain volume, and a corresponding increase in the production of cerebrospinal fluid, thus necessitating more frequent tapping, when progressively smaller quantities of fluid will be obtained indicating that the brain volume has been increased.

Ventricular punctures as employed in the relief of postoperative intracranial tension do not carry the risk of brain stem damage, and as employed by the neurological surgeon often effectively tide the patient through a postoperative crisis.

Relief of intracranial pressure by the so-called "dehydration" method is accomplished by the administration of hypertonic solutions and the limitation of total fluid intake. Since Weed and his associates published their work on the effect of the administration of various solutions on brain volume and increased intracranial pressure, these solutions have been widely used. The hypertonic solutions of sodium chloride and concentrated Ringers' solution are administered intravenously. However, since their effect is of such short duration, they are seldom employed. Fifty per cent glucose solution, twenty-five to fifty cubic centimeters, is more universally employed intravenously.

The effect of these hypertonic solutions depends upon dehydration by increasing the osmotic pressure of the blood, thereby attracting intracranial fluids into the blood stream. This dehydration may be carried further by administration of magnesium sulphate by mouth or by rectum, which acts by abstracting fluids from the blood stream. Dehydration may be continued further by limiting the total fluid intake. The chief objection to the employment of the hypertonic solutions is that the effect is of short duration, usually lasting not longer than three or four hours, and the fact that following the administration of these solutions, there is a secondary rise of intracranial pressure to a point even higher than before the administration. This secondary rise should be avoided by four-hourly administration of the solution. Recent experimental evidences indicate that the hypertonic sucrose injection is not followed by a secondary rise in pressure. This result is ascribed to the lack of utilization by metabolic processes and the difficulty with which it diffuses. The dehydration method is undoubtedly effective in reducing the intracranial tension, but it taxes the surgeon to the limit of his ability to maintain the proper balance between the reduced intracranial tension and the fluid content of the tissues of the body as a whole. No specific quantitative fluid intake can be stated, since the water balance in the tissues and the cerebrospinal fluid pressure are influenced by so many variable factors. The total fluid intake for each patient must be governed largely by the clinical picture presented.

The harmful effects of dehydration when carried too far will be noticed in the increased pulse and respiratory rate, a rise in temperature, and a dry parched skin. These signs give evidence that the tissue water balance has fallen too low, and fluid must be increased.

The harmful effects of a large fluid intake are clearly demonstrated in the patient who has been waterlogged by the administration of enormous quantities of normal saline (2,000 to 5,000 cubic centimeters), as too often practiced in the treatment of shock following brain injury.

Finally, it is my opinion the chief objection to the method of limitation of fluids and the abstraction of fluid from the brain tissue lies not so much in the method per se as in the difficulty in accurately interpreting the patient's condition at all times so that the delicacy of balance demanded may be constantly maintained.

DISCUSSION

DR. R. E. SEMMES (Memphis): I think Dr. McKinney has pointed out very clearly that the increase of intracranial pressure may be due to an increased volume of any one of the elements within the cranial cavity, and it is essential, of course, to determine which one of these elements is increasing. It should be borne in mind also that we have no signs of acute increased intracranial pressure until or unless one of these elements increases in volume faster than either physiological compensation or the removal of free fluid or blood clot or surgical decompression. Otherwise there are no signs of increased pressure. In other words, one may have an increased brain volume without increased pressure signs or an increase in the blood content of the skull or some shed blood within the skull cavity without signs of increased pressure.

Only one in ten patients with brain tumors enters the hospital showing signs of increased pressure, such as slow pulse, slow respiration, and increased blood pressure, because compensation has taken place by atrophy of the brain, by exclusion of blood from circulation within the cranial cavity, or by exclusion or extrusion of fluid largely by the physiological mechanism of vomiting, which reduces the patient's fluid content and dehydrates the intracranial contents, as well as of the rest of the body.

It must be remembered also that the patient may develop a slow pulse and slow respiration following a head injury which is not due to increased pressure; in other words, a disturbance, a shake-up of an autonomic center not infrequently gives you this picture, and these patients, of course, are in need of fluids and are harmed by dehydration.

Another point worth mentioning is that once the free fluid has been removed from the cranial cavity, more or less completely, any further lumbar punctures or ventricular punctures fail to do any good, so there is no point in reducing the fluid content of the body below the physiological needs.

DR. COBB PILCHER (Nashville): Mr. President and Gentlemen: Dr. McKinney has brought to the attention of this association one of the most important problems that arises in medicine of the present day, not only important to the neurological surgeon because of his dealings with tumors, abscesses, and various other technical aspects of this important subject, but because of the great increase in the frequency of automobile accidents and of head injuries associated therewith. This frequency brings to the attention of the general practitioner and of the general surgeon in particular this problem which is an extremely important one, namely, that of the fluid balance in the brain, because, as we know, the great majority of head injuries do not have intracranial hemorrhages, do not have fractured skulls necessarily, or if they do, it has no bearing on the ultimate outcome of their symptoms; they have the symptom complex which has in the past been ascribed to cerebral edema.

The problem of the fluid balance within the skull is a very, very old one. Children with hydrocephalus were known and described in antiquity. Hippocrates and Galen talked about the water in the skull, and I should like to read a quotation written in 1842 by Francois Magendie, one of the great early investigators of the nervous system: "That child has water in the head, says the common man. That child has hydrocephalus, gravely says the physician, repeating literally by a Greek word what the ignorant said in ordinary language. But what is this water? Whence comes it? It is with this that the physician should be occupied."

In 1842 Magendie voiced a problem that we are still concerned with. This problem, I think, might be brought down to one essential concept, the so-called Monro-Kelly hypothesis, and that is the conception of the skull as a closed box, enclosing the brain, the cerebrospinal fluid, and a certain amount of blood which is within the cranium at all times. Those three factors, all of them essentially fluid factors, are the things that determine the ability of intracranial pressure, and it is to some variation in one of these factors that one must look for the solution of the problem of the increased cranial pressure that follows head injuries, that follows operations on the brain, or that follows hemorrhage into the cranial cavity.

This problem is one that is far from being settled, and the various opinions on the subject have an enormous variation. As Dr. McKinney has pointed out, people differ tremendously in their conceptions of this subject. Some people feel that there is a true cerebral edema, some people feel that there is an increase in the blood volume within the skull, and others feel that there is an imbalance of the cerebrospinal fluid either in its formation or in its absorption.

Recent experimental work in our laboratory has thrown considerable doubt on the existence in any closed skull of an actual cerebral edema in the sense of increased fluid within the brain tissue, because the skull, after all, is a closed box, and such an increase of fluid in the tissues can occur only as the result of a compensatory diminution in the cerebrospinal fluid or in the amount of blood inside the head. It is very probable that the increased pressure that follows head injuries or operations on the brain results from a change in the cerebrospinal fluid rather than a true cerebral edema as has always been believed to be true.

If this is the case, the treatment of such cerebral edema—if I may continue to use that term—is to be concerned with the regulation of the formation or absorption of the cerebrospinal fluid. As Dr. McKinney has already pointed out, this may be done by an actual removal of cerebrospinal fluid at lumbar or ventricular puncture, by the administration of dehydrating solutions, hypertonic solutions which actually remove fluid from all tissues, or by a decompression which simply gives those fluids more room to expand.

Lumbar puncture is a controversial subject but is, in my belief and that of many neurosurgeons, definitely dangerous in the treatment of acute cerebral edema. It is dangerous for two reasons: First, because with an increased pressure in the skull, the sudden removal of fluid below decreases the pressure below and allows the medulla to be jammed down into the foramen magnum. This results occasionally in acute respiratory paralysis and death. The second objection is that we know experimentally and clinically that the removal of a considerable amount of cerebrospinal fluid by lumbar puncture results in an immediate fall in intracranial pressure but is subsequently followed by a rise in intracranial pressure greater than that which formerly existed.

The problem, therefore, in those cases which do not demand operation is one of reducing intracranial pressure by dehydrating solutions. As Dr. McKinney has said, the preferable method of doing this is by the use of magnesium sulphate administered by mouth or by rectum and by the use of intravenous sucrose solution which does not have the great disadvantage formerly encountered with glucose.

DR. T. D. McKINNEY (closing): Mr. President and Gentlemen: I believe there is nothing that I might add except further to emphasize the danger of doing spinal punctures as ordinarily practiced in the relief of acutely increased intracranial pressure. This is true particularly of the general surgeon and the general practitioner in the management of a damaged brain in accident cases, and it applies of course equally as forcibly in the use of lumbar puncture for diagnosis of brain tumor when there are evidences of high intracranial pressure. Sudden death may be produced by the jamming of the medulla at the foramen magnum or the incisura of the tentorium.

ACUTE MASTOIDITIS*

W. G. KENNON, M.D., F.A.C.S., Nashville

THE EXCUSE, if there be one, for bringing this subject before this assembly is that it often proves valuable to review conditions which are familiar and frequent in order to consolidate our positions, as the familiar communique of twenty years ago expressed it after there had been a lot of fighting and a very slight advance.

Mastoiditis is the complication of suppurative otitis media for infection practically never reaches the mastoid primarily. Why mastoiditis does not more frequently complicate acute middle ear suppuration seems remarkable, when we think of the anatomical structure of the middle ear and mastoid and realize that the eardrum is not only contiguous to, but communicates directly with the cells of the mastoid so that fluid can be forced through the middle ear into the most peripheral of these cells (slide). In fact in every case of otitis media there is a certain amount of mastoiditis, for it is impossible to conceive that the cells such as the mastoid antrum and those directly communicating with it should entirely escape participation in an inflammatory reaction where there is even the most moderate amount of exudation into and back pressure from the middle ear cavity.

It is, however, the cases where the infection is of sufficient virulence to invade the mastoid cells and cause suppuration or necrosis of the bone or both which require more adequate drainage than is provided by the perforation in the drum membrane and the removal of bone which is so diseased that return to normal is not possible, which are regarded as mastoiditis.

This discussion is purposely limited to acute otitis media and mastoiditis, as this is sufficient to occupy the time allotted and not tire you unreasonably. Acute mastoiditis being the complication of acute suppuration of the middle ear the primary symptoms must therefore be otitis media. Usually this otitis media is a present symptom with a purulent discharge from the drum through a perforation of the drum membrane produced by the suppurative process or by incision. Occasionally mastoiditis occurs without perforation of the tympanic membrane and discharge from the middle ear. This particular type is more frequent in infants and young children. Occasionally an otitis media becomes shut off from the mastoid cells and subsides, while the suppurative process continues in the mastoid structure. Such cases are unusual. In the average case of mastoiditis we have a purulent discharge from the middle ear which has existed for a period of a week or more. When this discharge is profuse and shows no tendency to become less after this length of time one must consider the probability of a surgical mastoiditis.

Variation in the amount of discharge is also of considerable significance. If, for instance, the amount of discharge has been decreasing and suddenly without any definite ascertainable cause the amount increases it probably means that there has been a wider extension of the suppurative process. Persistence of discharge beyond a period of two or three weeks without some very definite cause such as enlarged adenoid should cause us to at least think of the possibility of mastoid involvement of such extent that operative intervention should be considered. It is perfectly possible for an acute middle ear suppuration to last for two or three months and then to heal without mastoidectomy, but the alterations in the structures of the middle ear will probably be so great as to result in permanent, irremediable changes which will interfere materially with the acuity of hearing.

Pain is a variable symptom and every patient is a law unto himself. Persistent, deep, boring pain which occurs after the existence of otitis for a week or more should not be disregarded. It is occasionally very difficult to determine just what certain patients regard as pain. Tenderness over the mastoid occurring early in otitis media has been called "mastoidism" by Alexander and is of no significance. It is almost invariably present in the first day or two of an acute otitis. This tenderness is superficial and the mere brushing of the finger over the skin of this region is sufficient to cause complaint.

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*Read before the Tennessee State Medical Association, Knoxville, April 13, 14, 15, 1937.

Tenderness which occurs late and is persistent is of great importance. To elicit this sort of tenderness firm pressure should be made over the tip of the mastoid process, over the mastoid antrum and over the posterior part of the mastoid process (slide). Persistent tenderness over these three regions in the presence of acute suppuration of the middle ear is of very great diagnostic significance.

Post auricular swelling which is due to perforation of the cortex and the formation of a subperiosteal abscess enables one to make a diagnosis by looking at the patient from across the street.

Fever is very significant and almost invariably present. We are inclined to disregard fever of slightly above the normal, but do not disregard a mild persistent febrile reaction in your cases of otitis media. A temperature curve which varies from slightly subnormal to ninety-nine or a hundred Fahrenheit should be regarded with as much attention in this disease as more spectacular variations, for if proper treatment is instituted at this stage we will in the majority of cases avoid the spectacular variations which indicate some intracranial complications.

Sagging of the posterior-superior portion of the canal wall and slight dulling so to speak of the bony irregularities which can be palpated on the surface of the mastoid are due to edema of the soft tissues (periostitis) and indicate inflammation in the cells close to the canal wall and to the cortex respectively. It is difficult in many cases, even for those who are practiced in otoscopic examinations, to determine whether there is or is not sagging. Where this sagging is unmistakable I believe it to be a valuable sign. It is not by any means an absolute indication for operation, for on numerous occasions this sagging will subside along with the other symptoms which may be causing anxiety.

Sleeplessness is usually attributed to pain, but so many patients with mastoiditis have no pain to account for sleeplessness that one should always make it a point to ask if they sleep well and if not why not? More frequently than not the answer is, "I do not sleep well and I do not know why." "I just cannot sleep." "No pain, no headache, not anything." This sleeplessness is significant and deserves more than passing attention. The most logical explanation which occurs to me is that we have a congestion of the vessels supplying the inflamed area and that the meningeal vessels coming as they do from the same parent stem are also dilated and the resulting cerebral congestion causes a state of mild excitation. If you do not agree with this theory you can evolve one which seems more rational to you.

Facial paralysis occurring during the course of an acute otitis is generally regarded as an imperative indication for mastoidectomy. The leukocyte count is not greatly elevated in this condition unless there is some complication. Nine to ten thousand will be about the average. If you have a leukocytosis of fifteen thousand or more you had best be on the lookout for some complication directly due to the mastoiditis or some condition which is independent of it such as pneumonia, pyelitis, etc.

It has been well said that laboratory aids are good servants, but poor masters. A particularly good servant is the X-ray and I do not know of a poorer master. The otologist who operates on the evidence of X-ray films without additional symptoms of mastoiditis is in for a lot of grief both for himself and for those on whom he practices.

Of course, the evidence of any impending or existing intracranial complication is a very definite indication for operation.

In order that this paper may not have an altogether textbookish sound, a few minutes will be occupied in discussing a laboratory procedure which, to me at least, seems to have definite value in diagnosis and prognosis. Bacterial counts are made on smears of the discharge. This discharge is obtained from the secretion recently formed in the middle ear. In order to do this the external auditory canal is wiped as dry as possible and a few minutes allowed for fresh discharge to flow from the middle ear. This is wiped out with a cotton wound applicator and smeared on a glass slide fixed and stained with any of the ordinary laboratory dyes. In cases in which the inflammation is proceeding favorably the number of organisms will show a definite decrease on successive examinations. Where the inflammation tends to progress and invade the structures of the mastoid the organisms will, if few at the first examination, show definite increase in their number and if there were at the first examination a large number there will be no tendency to show any material decrease. In cases where the diagnosis of mastoiditis was so unquestionable that operation was advised when the patient was first seen such smears almost invariably showed a large number of organisms. The lantern slides show very well the progress in two pictures—one to recovery, the other to mastoiditis requiring operation. I have examined such smears from approximately two hundred patients and see no reason to change my opinion as to its value.

The most frequent serious complications of mastoiditis are: Lateral sinus phlebitis with its symptoms of a blood-stream infection with which you are familiar, meningitis, and brain abscess.

No discussion of mastoiditis would be approximately complete without mentioning what can be done for its prevention. The prevention of mastoiditis resolves itself into the prevention of otitis media. Otitis media is almost invariably a complication of some upper respiratory infection or a disease in which upper respiratory inflammatory involvement is one of the manifestations such, for instance, as measles, scarlet fever, etc., so to prevent mastoiditis we must prevent such diseases as those mentioned and in addition colds and influenza. A great deal has been and is being done toward the prevention of the acute exanthemate, but the progress in the prevention of colds and influenza, if there has been any progress, is not perceptible to the naked eye. So having the acute coryza or influenza what can be done in order to prevent involvement of the middle ear?

About the most important thing, in my opinion, is not what to do, but what not to do. The principal "not to do" is not to blow the nose. Certainly not to blow it with the enthusiastic abandon that one sees or rather hears so frequently, for it is in this manner that infectious material is often forced through the eustachian tubes into the middle ear. It is my impression that we have two periods in early life when otitis media is more frequently a complication of colds, etc. One is in the first year of life when the infant spends most of its time lying on its back and when it has a cold the orifices of the eustachian tubes are continually submerged in a puddle of infectious matter and again in that period when the mother is trying to make little ladies or gentlemen of their progeny by various measures including the proper blowing of the nose. The blowing of the nose is, of course, the polite way, and this method of clearing of the nasal passages is probably the one which would have been approved by Emily Post if she had written a chapter on nose blowing. If, however, it ever becomes my fortune to write an essay on this subject I believe that I will attempt to revive the ancient and honorable custom of sniffling. The motion of the cilia is toward the nasopharynx and we reverse the physiological current when we forcibly blow the secretion through the nostrils.

One hundred case records of children under ten years of age which were reviewed showed sixty-one to be five or more years old. Of the remaining thirty-nine thirteen were under eighteen months. These figures do not prove anything; but the fact that there were practically twice as many cases among those presumed to be than among those presumed not to be nose blowers suggests that there may be some basis for my opinion. It is certainly true that we often have adult patients who give a history of blowing their noses with such force as to give a feeling as if something had gone into the ear and this was soon followed by signs and symptoms of otitis media.

The proper way of blowing the nose, if there be such, is to stop one nostril and leave the other entirely free and then blow reasonably gently. Both nostrils should not be held and the intranasal pressure raised to the bursting point, then one nostril released with gratifying results in noise and perhaps in expulsion of the secretion from the nose through the anterior nares. In addition in some cases a small amount of this septic material is forced through the eustachian tube into the middle ear and such an occurrence has all the potentialities of a major disaster.

I do not believe that there is a great deal of virtue in nose drops. If there is any advantage to be gained by the use of this type of treatment the most valuable drops are those having some vasoconstrictor action, most useful of which are the various preparations of ephedrine. The simpler the preparation the better. Ephedrine one per cent in normal saline appears to be most effective and least harmful. Those products which contain everything from phenol and menthol to eucalyptus and thyme have no particular merits and many demerits. The ciliated epithelium is extremely delicate and many drugs even when very dilute are distinctly more harmful to this structure than would be compensated by any beneficial action which may accrue from their supposedly antiseptic properties. The indiscriminate and frequent use of the organic silver salts such as mild silver protein (argyrol) or neo silvol in many cases is distinctly harmful and in addition there is the possibility of the development of argyria.

Of course, otitis media occurs occasionally from water entering the nasal passages and middle ear while swimming and diving, but one cannot compel one's patients to lead an altogether cloistered life. Having a patient with otitis media, what measures if taken offer the best prospect of preventing involvement of the mastoid. It is questionable if the surgical opening of the middle ear through incision of the tympanic membrane, providing spontaneous rupture occurs early (twenty-four hours), has any influence in preventing mastoiditis. If, however, the otitis media has been in existence without spontaneous rupture of tympanic membrane for a longer period than this the drum should be opened. The relief of pain is, in any case, very welcome to the patient. The value of repeated myringotomies where the drainage is free is questionable. I have never been able to convince myself that this did any good whatever. One can incise the tympanic membrane through its entire semicircumference and within a day or two there is an opening no more than one-half to one millimeter in diameter. Of course, if this opening closes entirely reopening is necessary.

As to the local treatment of the otitis media there are advocates of irrigation and of the so-called dry method of treatment. I cannot see that one method has any advantage over the other so you can take your choice as to which you employ in a given case.

To go into the technique of mastoidectomy would be a waste of time. When it has been decided that the mastoid disease is of such extent that recovery is improbable mastoidectomy should be done without undue delay.

To summarize: The prevention of upper respiratory infections is the prevention of otitis media. The prevention of otitis media is the prevention of mastoiditis. The symptoms of mastoiditis are those of otitis media with additions:

1. A profuse discharge from the middle ear which shows no tendency to stop after a reasonable period.
2. Pain which persists after free discharge from middle ear is established.
3. Persistent deep tenderness.

4. Fever.
5. Edema either over the external surface of the mastoid or the edema manifested by sagging of the canal wall or both.
6. Sleeplessness explicable or inexplicable.
7. Facial paralysis.
8. Symptoms which indicate an impending or existing intracranial complication.
9. Laboratory aids including X-ray.

DISCUSSION

DR. E. L. GRUBB (Knoxville): Mr. Chairman and Gentlemen of the Tennessee State Medical Association: When any essayist brings a paper before this body that has so completely covered the subject as has Dr. Kennon's, there is very little left to say. As a matter of fact, I could not find anything with which to disagree with him upon. I should like to add a few amens to some of the things that he said.

In the first place, to elaborate a little bit on his résumé of the symptoms, to get down to common working terms, the practitioner is frequently confronted by a patient who comes in complaining of earache or possibly the eardrum has already ruptured and there is a discharge, temperature, and so on. Some of those cases are, as we all know, pure acute otitis medias, others are mastoid infections, even from the start, typical mastoiditis beginning with earache, ruptured eardrum, or the drum may have been opened by the practitioner or otologist, profuse purulent discharge, low-grade temperature, leukocytosis ranging up to possibly an upper limit of 15,000, tenderness, deep tenderness over the mastoid area, particularly over the points that Dr. Kennon has mentioned.

A word about the points of tenderness. One might be confused at times relative to that because the average very acute case of otitis media will have tip tenderness and antrum tenderness. One might be a little careful in determining that the patient has a mastoiditis on tenderness estimation.

Very frequently cases coming under our observation or sent to our office by our various practitioner friends oftentimes come in expecting an operation when this condition has already been going on for some four or five days. I would like to state here that in my opinion and in the opinion of most otologists there are rare instances when any case of mastoiditis has reached a surgical stage before fifteen days' duration. There might be a few days' exception, but the otologist who generally waits more than fifteen days will probably be on the safer side.

With respect to treatment, particularly from the standpoint of the general practitioner, oftentimes when there is pain in any organ or any part of the body we are inclined to use hot applications. To my mind, hot applications are contraindicated in the case of acute mastoiditis. I am very much in favor of cold rather than heat.

The use of ear drops has been in custom from time immemorial, almost, and I should like to state here that in my opinion the use of any type of drugs in the external auditory canal is purely a waste of time, not only in mastoiditis, but in acute otitis media. The old common irrigations of alcohol and boric acid have been resorted to from time to time. Dr. Kennon says take your choice. I will be a little bit more specific and take my choice on the dry side, leaving off the alcohol and boric acid irrigations, or any other type of liquid irrigations other than something used merely for the purpose of cleansing the canal of its heavy secretions.

Dr. Kennon has very ably covered the subject, and if we would all follow the outline he has given I am rather sure we would do more for our cases of mastoiditis.

DR. C. C. TURNER (Memphis): Dr. Kennon has referred to those cases of otitis media complicated by facial paralysis. In addition to this we see not infrequently ipselateral internal squint. This demands an interest in the condition of the petron. In the usual X-ray examination for mastoiditis the focus is made upon the mastoid cells and the deeper recesses of the petron are not brought out in the usual film. Even in the presence of normal pneumatization of the mastoid cells it is possible for progressive pathology to be present in the deeper recesses of the petron. Therefore, when Gradenigo's syndrome is present a profile of the petron should always be requested with careful inspection of its apex.

DR. NICHOLAS GOTTEN (Memphis): I do not want the discussion to get too far afield because soon we will be discussing obstetrics in relation to mastoiditis and otitis media, but we neurological surgeons are frequently called upon to treat some of the complications of mastoiditis. We have all seen cases of brain edema and we discussed this afternoon whether or not they should be dehydrated or whether they should have spinal drainage. Personally, I do not think either method does much good and we are always up a stump as to what to do in cases of mastoiditis and otitis media that develop septicemia, brain edema, and hemolytic streptococcic meningitis.

It has been my experience recently, while working with Dr. Warr and Dr. Blassingame, to have two such cases. We used a new preparation put out by the Winthrop Chemical Company called Prontosil. In one of those cases the patient had a temperature of 106 and he was having continuous

Jacksonian convulsions. We gave Prontosil solution in large doses and in thirty-six hours the temperature was normal. The patient left the hospital in a few days. Conservative treatment was used in the mastoid infection.

Another case developed meningitis and a positive hemolytic streptococcus was obtained from the spinal fluid. Usually these cases die within twenty-four hours. This case lived for fourteen days and finally died. We believe that the child's life was prolonged by Prontosil. I do not bring up the subject of Prontosil for general discussion, but to call your attention to a drug that may give us a little more aid in the complications of otitis media.

DR. T. M. ROBERTS (Sweetwater): Will the doctor tell us what he uses to alleviate pain?

DR. W. G. KENNON (Nashville): I have very little to say except that no otitis media should be allowed to discharge indefinitely. An ear that has discharged profusely for two or three weeks should have something done about it. Whether it requires a mastoid operation is a question, but it should not be allowed to continue because there are going to be changes in the middle ear which we cannot rectify.

I have had no experience with Prontosil as yet. I happen not to have had a patient with a blood-stream infection since these drugs became available.

As to the pain, the early pain in acute otitis media is best controlled by incising the drum membrane. Later the pain of mastoiditis, a deep boring feeling of pressure back of the ear, is only controlled by the use of hypnotics, and, in my hands, codeine has usually been sufficient.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee
Office of Publication, 508 Doctors Bldg., Nashville, Tenn.

Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 15, 1932.

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H. H. SHOULDERS, M.D., Editor and Secretary

MARCH, 1938

EDITORIAL

National Health Program and Some Proposals Towards Its Design

A report under the above caption was made recently to the President of the United States by Miss Josephine Roche, chairman of a committee known as an interdepartmental committee. The report was published in the Journal of the American Medical Association for February 26, 1938. It has also received wide publicity in the lay press.

This report deserves careful consideration by the medical profession, and the lay public, for several reasons.

The matter of medical care is of such importance that any suggestion, concerning it, from an authoritative source, or from a source such as this committee, should receive careful consideration.

The possibilities of a very far reaching effect which the report may have on the whole of American life make it urgently necessary that the report be subjected to very careful study and analysis.

The first paragraph is a very broad statement. It is as follows: "The cost of illness and death in this country amounts annually to about ten billion dollars, including in this total the combined costs of health services and medical care, loss of wages through unemployment resulting from disability and the loss of potential future earnings through premature death."

This statement may be true. It should not be accepted by responsible officials, however, without very accurate and authentic data to support it.

In considering the statement this question naturally arises: How is it that a statistician can figure so accurately the wage loss sustained by a person, or a group, when the person or group is not regularly employed? It is obvious that an illness which comes in a period of unemployment involves no *wage loss* as a result of that illness.

One can readily understand that if all the people in a group were continuously employed at a fixed wage per day, it would be an easy matter to compute the cost, in wage loss, to an individual or group, resulting from illness.

In the absence of such a state of employment the margin of error in computing wage loss from illness is very wide.

The same question arises in connection with the *financial loss* resulting from premature death. Many factors enter into this computation. Unless all the factors are considered and accurately appraised the margin of error is, again, very wide.

Another striking statement is as follows: "No physician's care was received in thirty per cent of serious disabling illnesses among relief families and in twenty-eight per cent of such illnesses among families just above the relief level as contrasted with a figure of seventeen per cent of illnesses receiving no care by a physician among families with income of $3,000 and more."

At once, one is struck by the question: How did the statistician determine the presence of "serious disabling illness" in persons not seen by a doctor at all during the illness? On what evidence is such a serious and accurate statement based?

The thirty per cent on relief rolls with "serious and disabling illness" deserve special consideration.

In the first place it must be remembered these people were under the care of welfare or relief agencies set up by the government at the time this survey was made. Plans for the medical care these people received were made and administered by welfare agencies established by the government. The plan in effect in Tennessee was, in brief, as follows: A family on relief was supposed to call the relief administration for medical care when needed. The administrator then sent a case worker to the family to see if medical care was actually needed. Medical care was authorized or not, depending upon the conclusions of the case worker on the case. If it was decided that medical care was actually needed a doctor was given authorization by the agency to attend the case. However, he was authorized to make only two calls without further authorization to the doctor from the agency. The same general plan was in effect in other states.

If thirty per cent of these relief families received no medical care at all when suffering from "serious disabling illness" whose fault was it? Certainly the lack of money with which to pay the doctor for his services does not apply in this group. They were not even expected to pay the doctor. The fault must have been in the relief agencies who were charged with the duty, and supplied with funds, with which to deliver care to these people.

Not only does the fault rest with the welfare agencies, this statement in effect actually shows that the welfare agencies must have denied these people the welfare they were supposed to have administered, or they were negligent to an extent that is almost criminal. Poverty is not the answer. Negligence of the medical profession is not the answer, nor was lack of relief funds the answer. Even if these poor bewildered people on relief did not make a request for medical care when needed, the case workers charged with the duty of determining the need for medical care should have recognized the existence of "serious disabling illness" and authorized medical care when needed even without an expressed request by the client.

This statement also shows very conclusively that the families "just above the relief level" received more medical care than the families on relief.

Certainly these families could not pay a doctor for medical care. What then is a logical explanation of this particular finding? The conclusion, in our opinion, is inescapable that the lack of medical care in a high percentage of relief families was due, in large measure, to the welfare agencies.

The group with an annual income of $3,000 or more, in our opinion, do not need the care of a federal welfare agency. If they do need such care it certainly would be logical as a first step to relieve them from filing income tax returns and paying a federal income tax. Such a step would aid them materially in taking care of their own particular needs in their own way.

Finally, this statement suffices to show something of the character of medical care that will be administered, *if and when* it is administered by *governmental welfare* agencies vested with powers over doctors and patients.

THE MEDICAL CARE OF CLIENTS OF THE FARM SECURITY ADMINISTRATION

In December, 1937, representatives of the Farm Security Administration in Tennessee held a conference with the Board of Trustees of the Tennessee State Medical Association with a view to formulating plans for the medical care of clients of the administration. A plan was formulated. It was submitted to component medical societies in the state and has been approved by a large number of these societies.

The Farm Security Administration also approved the plan that was drawn.

The officers of several local societies have written the headquarters office to know when the work will start and how.

The following statement is an explanation of the delay in the actual beginning of the work:

Due to the limitations of a small administrative staff and urgency of other matters, there has been some delay on the part of the Farm Security Administration representatives in endeavoring to make contact with the county medical societies. The initial contacts mentioned above have been made and mark the beginning of the actual application of this program. It is expected that other county medical societies will be approached as rapidly as possible. Those counties having the largest number of clients will be approached first, as it is felt that the need for such a plan is greatest where the largest number of families are concerned.

A STUDY OF MEDICAL CARE BY THE MEDICAL PROFESSION

Several different reports have appeared from time to time purporting to show the inadequacy of medical care in the United States.

There is much evidence to show that much of the data compiled is inaccurate and many of the conclusions drawn are equally inaccurate.

The Board of Trustess of the American Medical Association have requested the cooperation of state and county medical societies throughout the United States in ascertaining what the facts are.

An outline of the study was published in the *Journal of the American Medical Association*, February 12, 1938, and blank forms will be supplied at an early date to be used in collecting data.

This is an important study and deserves the hearty cooperation of all concerned.

POSTGRADUATE MEDICAL EDUCATION

The postgraduate course in obstetrics has progressed through the first year and into the second and now has been offered in thirty cities, towns, and county seats. The course has been placed within reach of doctors of sixty Tennessee counties. By the end of the second year, which will end December 31, 1938, the course will have been placed within driving distance by automobile of every doctor in Tennessee, in forty-five cities, county seats as teaching centers, and it appears now approximately 1,200 or 1,400 physicians will have taken advantage of it. To date a total of 815 doctors have had the course. The Chattanooga circuit or seventh circuit is now in process of formation where slightly over 170 doctors have already enrolled. Seventy-five of these are in the city of Chattanooga and will be included in the Chattanooga postgraduate group. A separate group is being formed for the colored doctors in Chattanooga. Instruction will open in the Chattanooga area April 1.

The committee has solicited an opinion from each of the contributing agencies to this program in Tennessee as to their feeling about assisting the State Medical Association to finance it for another two-year period after 1938 in some other subject. The Board of Trustees of the State Association in a recent meeting in Nashville also passed a resolution recommending to the House of Delegates for the April meeting that immediate plans be made for a continuation of the program. Questionnaires sent to the 800 doctors who have thus far had the present course in obstetrics have been tabulated and show a first choice of internal medicine to be offered as the next course in Tennessee, but with a strong second choice for pediatrics.

TENTATIVE SCIENTIFIC PROGRAM OF THE TENNESSEE STATE MEDICAL ASSOCIATION

The Tennessee State Medical Association will meet at the Noel Hotel, Nashville, April 12, 13, 14, 1938.

The following program is in tentative form. There will be changes when printed in the official program.

TUESDAY NIGHT, APRIL 12, 1938

Dr. George C. Williamson, Columbia, president, Tennessee State Medical Association. *Presidential Address*

Dr. Irvin Abell, Louisville, Kentucky, president-elect, American Medical Association, a special address, "Medicine in the Changing Social Order."

Guest Speakers

Dr. Gershom J. Thompson, Rochester, Minnesota, a special address, "Transurethral Prostatectomy."

Dr. Arthur W. Erskine, Cedar Rapids, Iowa, a special address, "Modern X-ray Treatment."

Dr. James W. Bruce, Louisville, Kentucky, a special address, "Behavior Problems in Children."

Dr. John Zahorsky, St. Louis, Missouri, a special address, "The Newborn Baby in the Hospital."

Dr. H. Earle Conwell, Birmingham, Alabama, a special address, "The Internal Fixation of Fractures of Neck of Femur."

"Bedside Diagnosis of Cardiac Irregularities," Dr. Chas. R. Thomas, Chattanooga. To discuss: Dr. David W. Hailey, Nashville; Dr. A. M. Goltman, Memphis.

"Surgery in Pulmonary Tuberculosis," Dr. Alex Steward, Chattanooga. To discuss: Dr. Alfred Blalock, Nashville; Dr. D. M. Carr, Memphis.

"Present-Day Concept of Nephritis," Dr. C. A. Hartung, Chattanooga. To discuss: Dr. J. O. Manier, Nashville; Dr. J. B. McElroy, Memphis.

"Treatment of Empyema, Tidal Irrigation," Dr. Gene H. Kistler, Chattanooga. To discuss: Dr. Murray B. Davis, Nashville; Dr. J. Murray Davis, Memphis.

"The Acute Abdomen of Infancy and Childhood," Dr. W. T. Mathes, Greeneville. To discuss: Dr. J. J. Hobson, Memphis; Dr. Oliver W. Hill, Knoxville.

"Diagnosis and Treatment of Pilonidal Cysts," Dr. E. T. West, Johnson City. To discuss: Dr. R. B. Gaston, Lebanon; Dr. D. W. Smith, Nashville.

"Pneumothorax with Case Reports," Dr. Rufus Smith, Knoxville. To discuss: Dr. Jas. L. Hamilton, Chattanooga; Dr. Hollis E. Johnson, Nashville.

"Black-Widow Spider Bites," Dr. Henry T. Kirby-Smith, Winchester. To discuss: Dr. Joe B. Wright, Lynnville; Dr. John B. Youmans, Nashville.

"Sterilization of the Female by Cauterization of the Uterine Cornu," Dr. Chas. G. Bowers and Dr. Margaretta Bowers, Lyles. To discuss: Dr. K. C. Copenhaver, Knoxville; Dr. W. C. Dixon, Nashville.

"Hypothyroidism," Dr. O. N. Bryan, Nashville. To discuss: Dr. R. G. Waterhouse, Knoxville; Dr. N. S. Shofner, Nashville.

"Self-Inflicted Skin Lesions," Dr. Howard King and Dr. C. M. Hamilton, Nashville. To discuss: Dr. J. L. Gillen, Chattanooga; Dr. A. H. Lancaster, Knoxville.

"The Treatment of the Nonconvulsive Toxemia of Pregnancy," Dr. Frank E. Whitacre, instructor, postgraduate instruction in obstetrics.

"The Late Effects of Toxemia of Pregnancy," Dr. M. S. Lewis, Nashville. To discuss: Dr. R. G. McIllwaine, Knoxville; Dr. E. F. Buchner, Chattanooga.

"Common Errors in the Management of the Cardiac Patient," Dr. W. R. Cate, Nashville. To discuss: Dr. Dan R. Thomas, Knoxville; Dr. Philip H. Levinson, Chattanooga.

"Recent Advances in the Management of the Diabetic Patient," Dr. R. C. Derivaux, Nashville. To discuss: Dr. E. R. Zemp, Knoxville; Dr. W. E. Bryan, Chattanooga.

"Lesions of the Colon," Dr. R. L. Sanders, Memphis. To discuss: Dr. W. D. Haggard, Nashville; Dr. H. Quigg Fletcher, Chattanooga.

"Comparative Aspects of the Treatment of Syphilis," Dr. E. R. Hall, Memphis. To discuss: Dr. Joseph B. Killebrew, Chattanooga; Dr. E. Gurney Clark, Nashville.

"Recent Advances in the Treatment of Pneumonia," Dr. H. B. Gotten, Memphis. To discuss: Dr. R. E. Ching, Memphis; Dr. K. S. Howlett, Franklin.

"Perforations of the Intestinal Tract," Dr. E. D. Mitchell, Jr., Memphis. To discuss: Dr. J. L. McGehee, Memphis; Dr. A. M. Patterson, Chattanooga.

"The Opportunities and Responsibilities of the Physician in Psychiatric Cases," Dr. E. W. Cocke, Memphis. To discuss: Dr. A. W. Harris, Nashville; Dr. J. B. Swafford, Chattanooga.

A symposium on the present-day uses of sulfanilamide:

a. "Sulfanilamide in Meningococcic Meningitis," Dr. G. J. Levy, Memphis.

b. "Sulfanilamide in Urology," Dr. J. C. Pennington, Nashville.

c. "Sulfanilamide in Otolaryngology," Dr. Eugene Orr, Nashville.

To discuss: (a) Dr. John M. Lee, Nashville; Dr. R. B. Wood, Knoxville.

(b) Dr. Tom R. Barry, Knoxville; Dr. Dexter L. Wood, Waynesboro.

(c) Dr. Robert E. Sullivan, Nashville; Dr. G. H. Berryhill, Jackson.

SYMPOSIUM ON TRAUMATIC CASES IN CO-OPERATION WITH THE SECTION ON RAILWAY SURGERY

"Principles in Treatment of Fractures of Small Bones of the Hands and Feet," Dr. Wm. J. Sheridan, Chattanooga. To discuss: Dr. R. R. Brown, Nashville; Dr. J. H. Francis, Memphis.

"Internal Derangements of the Knee Joint," Dr. Jarrell Penn, Knoxville. To discuss: Dr. George K. Carpenter, Nashville; Dr. Willis C. Campbell, Memphis.

"Intraspinal Rupture of the Intervertebral Discs as a Cause of Low-Back Pain and Sciatica," Dr. Francis Murphey and Dr. R. E. Semmes, Memphis. To discuss: Dr. R. W. Billington, Nashville; Dr. J. S. Speed, Memphis.

"Diagnosis and Treatment of Acute Osteomyelitis," Dr. H. G. Hill, Memphis. To discuss: Dr. A. H. Meyer, Memphis; Dr. Robt. C. Robertson, Chattanooga.

"The Internal Fixation of Fractures of Neck of Femur," Dr. H. Earl Conwell, Birmingham, Alabama.

TENTATIVE PROGRAM OF THE TENNESSEE ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY, APRIL 11, 1938

"Blood Stream Infections of Otitic Origin," Dr. H. I. Lillie, Rochester, Minnesota, chief of Department of Otolaryngology, Mayo Clinic; president-elect of the American Laryngological, Rhinological, and Otological Society.

"Neurologic Phases of Ophthalmology," Dr. W. I. Lillie, Philadelphia, Pennsylvania, professor of ophthalmology, Temple University School of Medicine.

"Experimental Virus and Bacterial Infections of the Chick Embryo," Dr. Ernest W. Goodpasture, Nashville, Tennessee, professor of pathology, Vanderbilt School of Medicine. Awarded the research medal of the Southern Medical Association on the basis of this work.

"Treatment of Chronic Dacryocystitis," Dr. R. O. Rychener, Memphis. One of the instructional courses given at the American Academy of Ophthalmology and Otolaryngology.

"Reports of Cases of Parenchymatous Keratitis Apparently Due to Metabolic Changes," Dr. J. B. Stanford, Memphis.

"Peroral Endoscopic Case Reports with Lantern Slides," Dr. D. Isbell, Chattanooga.

"The Treatment of Corneal Disease," Dr. A. H. Benz, Chattanooga.

"The Present Status of Surgery of the Nasal Accessory Sinuses," Dr. C. K. Lewis, Memphis.

TENTATIVE PROGRAM OF THE TENNESSEE STATE PEDIATRIC SOCIETY, APRIL 12, 1938

Morning Session

Dr. Eugene Rosamond, Memphis, presidential address, "Modern Trend of Pediatrics."

Clinical session: Case reports and presentation of cases by the pediatricians of Nashville to be held at the General Hospital.

12:30 P.M.: Luncheon given by members of the society in honor of Dr. John Zahorsky, St. Louis, Missouri, and Dr. James Bruce, Louisville, Kentucky.

Afternoon Session

Papers by Dr. John Zahorsky, St. Louis, and Dr. James Bruce, Louisville, will be presented before a combined meeting of the Tennessee State Pediatric Society and the Tennessee State Medical Association.

DEATHS

Dr. J. D. Hall, Readyville; Vanderbilt University Medical School, 1883; aged 83; died February 27 after an illness of one week.

Dr. Eugene Joseph Johnson, Memphis; Memphis Hospital Medical College, Memphis, 1897; aged 63; died February 19 of pneumonia.

RESOLUTIONS

DR. A. N. DOYLE

Dr. A. N. Doyle of Minor Hill, Tennessee, aged seventy-one, died December 13, 1937, after a short illness with pneumonia.

He was graduated from the University of Tennessee in 1888.

Whereas it is likewise the custom and desire to honor and commemorate the memories of its members who are taken from us by death and to perpetuate in our hearts those ties that are thereby broken, yet remain unbroken; and

Whereas Dr. Doyle has been taken from us by the Grim Reaper of Death.

Be It Resolved, That the Giles County Medical Society deeply deplores the passing of our friend, brother and fellow member from us; that we honor his memory and express the great sorrow that each member feels for himself in the loss of his friend and for the society at the loss of his loyal support, activity, and wise counsel.

That we extend to the members of his family our sincere sympathy in their sorrow and loss.

Be It Further Resolved, That a copy of these resolutions be sent to his family, a copy placed in the records of this society, and a copy sent to the secretary of the State Medical Association with request for publication.

GILES COUNTY MEDICAL SOCIETY.
A. W. DEANE, *President*.
J. W. SPEER, *Secretary*.

DR. FREDERICK T. MASSENGILL

Dr. Frederick T. Massengill, an honored member of the Washington County Medical Society, age 63, departed this life February 28, 1938, at his home in Grays Station.

Dr. Massengill began the practice of medicine in 1897, and during the World War was an officer of the medical corps, U. S. army. He was, at all times, known as an ethical, conscientious physician, a Christian citizen. His passing is a severe loss to the community, this society, and this section of the state.

Therefore Be It Resolved, That this society record its appreciation of his useful career and our loss of this worthy member. That a copy of this resolution be spread upon the records of this society, a copy furnished the state medical journal for publication, and a copy sent to his surviving relatives.

(Signed)
C. W. FRIBERG, M.D., *Chairman*.
W. M. BEVIS, M.D.
N. E. HARTSOOK, M.D.

NEWS NOTES AND COMMENTS

The following poem was sent to the JOURNAL by Dr. H. C. Shearer of Madisonville, Tennessee.

The authors of the poem are Mr. Charles F. Hunt and his daughter, Sandy Hunt.

It is obvious that a fine type of country doctor was the inspiration for this poem and that his services brought a fine poetic human response.

We believe the poem will be of interest to the doctors of Tennessee.

THE OLD COUNTRY DOCTOR

A toast to him so kind and grim—
To him who rode the lanes
With drugs and pills for all the ills
And all the aches and pains.

He'd never poke a stethoscope
Against the naked hide,
Or bind the arm to find the harm
That pressure does inside.

But, somehow, when he came and then
Gave look and thought to tongue,
He sensed aright the trouble sight—
The liver, spleen or lung.

With saddlebag—a trotting nag—
He sped the roads awide
To keep a soul and body whole
Or ease the one who died.

To poor abodes on muddy roads
Or rich ones on the pike
He went through sleet, the rain or heat
And doctored both alike.

When boy or girl to this old world
The stork was bearing near,
They sent him word, "Come help the bird
Unload his cargo here."

He took his fees in corn and peas,
Potatoes, shoat or calf.
But even so his pay was low,
He never got the half.

His kindly care kept many here
When they were fair to leave,
And when they died he watched beside
And helped the family grieve.

His days are o'er, his like no more.
Today we hunt about
To get high-tones to set our bones
And cut our innards out.

If it be true we get our due
Reward on judgment day,
The brightest wings and harps and things
Are saved for such as they.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY EXAMINATIONS

The next examinations will be held in San Francisco, California, on Monday and Tuesday, June 13 and 14, 1938.

For further information apply to Dr. Paul Titus, secretary, 1015 Highland Building, Pittsburgh, Pennsylvania.

AMERICAN ASSOCIATION OF INDUSTRIAL PHYSICIANS AND SURGEONS

On June 6, 7, 8, 9, 1938, the meeting of the American Association of Industrial Physicians and Surgeons will be held concurrently with the Midwest Conference on Occupational Diseases at the Palmer House in Chicago.

THORACIC SURGEONS MEET IN ATLANTA

The annual meeting of the American Association for Thoracic Surgery will be held in Atlanta at the Biltmore Hotel, April 4, 5, and 6. This organization represents one of the new specialties in surgery and numbers among its members many pioneers in chest surgery. This is the first time the association has met in the South.

Dr. Richard H. Meade, Jr., of Philadelphia is secretary.

The Madison Rural Sanitarium and Hospital wishes to announce the addition of Dr. Cyrus E. Kendall to its staff as pathologist, and further announce the expansion of its clinical and pathological laboratory facilities to serve the medical profession.

WOMAN'S AUXILIARY

President ---------------------- Mrs. W. T. Black
Memphis
President-elect ---------- Mrs. H. E. Christenberry
Knoxville
Press and Publicity ------------- Mrs. B. F. Byrd
Nashville

The Anderson County Medical Auxiliary met February 15, 1938, for a luncheon meeting at the home of Mrs. Thomas Jennings in Clinton.

Officers for the ensuing year were elected as follows:

Mrs. Thomas Jennings, President.
Mrs. Horton DuBard, Vice-President.
Mrs. James S. Hall, Secretary-Treasurer.

Chairmen of standing committees were appointed as follows:

Program and Public Relations—Mrs. P. M. Dings.
Membership—Mrs. J. M. Cox.
Hygeia—Mrs. O. E. Ballou.
Social and Publicity—Mrs. James S. Hall.

The program consisted of a review of the book, "An American Doctor's Odyssey," given by Mrs. P. M. Dings of Briceville.

ANDERSON COUNTY MEDICAL AUXILIARY.
By MRS. JAMES H. HALL, *Secretary.*

PROGRAM OF ELEVENTH ANNUAL CONVENTION OF WOMAN'S AUXILIARY TO TENNESSEE STATE MEDICAL ASSOCIATION

APRIL 12, 13, 14, 1938

Headquarters, Hermitage Hotel, Nashville, Tennessee

WOMAN'S AUXILIARY TO THE NASHVILLE ACADEMY OF MEDICINE AND DAVIDSON COUNTY MEDICAL SOCIETY WILL BE HOSTESS

GENERAL COMMITTEE

Chairman—Mrs. Theodore Morford
County President—Mrs. O. G. Nelson

Mrs. B. F. Byrd, Mrs. W. B. Brackin, Mrs. J. D. Lester, Mrs. Herschel Ezell, Mrs. W. R. Cate, Mrs. W. W. Wilkerson, Jr., Mrs. T. G. Pollard, Mrs. R. Z. Linney, Mrs. D. J. Johns, and Mrs. Lynch Bennett.

TUESDAY, APRIL 12, 1938

9:30 A.M.

Registration—Mrs. Herschel Ezell

1:00 P.M.

Executive board luncheon at Hermitage Hotel. Hostess, Mrs. W. T. Black. Followed by preconvention board meeting in private dining room, Hermitage Hotel.

8:00 P.M.

Auxiliary reception and musical at the home of Mrs. W. R. Cate, Graybar Lane. Mrs. Augustus S. Kech, president of Woman's Auxiliary to American Medical Association, will be the honoree.

WEDNESDAY, APRIL 13, 1938

10 A.M.

Eleventh Annual Convention of Woman's Auxiliary in the Assembly Room of Hermitage Hotel, Mrs. W. T. Black presiding
Invocation—Dr. Thos. C. Barr, pastor, First Presbyterian Church
Address of Welcome—Mrs. O. G. Nelson
Response—Mrs. W. G. Gragg
Memorial service for Mrs. J. L. Jelks, Memphis, and Mrs. H. D. Hicks, Clinton
Report of General Chairman—Mrs. Theodore Morford
Reading of minutes of Tenth Annual Convention—Mrs. Matt B. Murfree
Treasurer's Report—Mrs. W. A. Ruch
Address by Mrs. Augustus S. Kech, president of National Auxiliary
Report of National Convention—Mrs. J. D. Lester
Report of Standing Committees:
  Resolutions—Mrs. W. S. Nash
  Credentials—Mrs. Herschel Ezell
  Courtesy—Mrs. M. C. Shearer
Report of Officers
Report of Chairmen
Report of County President
Old Business
New Business
Announcements
Report of Nominating Committee
Election of Officers
President's Message—Mrs. W. T. Black
Introduction of President-elect—Mrs. H. E. Christenberry

1:00 P.M.

Luncheon at Belle Meade Country Club—Woman's Auxiliary to Nashville Academy of Medicine and Davidson County Medical Society honoring Mrs. W. T. Black

WEDNESDAY AFTERNOON

Historic Drive

WEDNESDAY EVENING

8:00 P.M.

Annual State Dinner at Centennial Club

THURSDAY, MORNING, APRIL 14, 1938

Postconvention Meeting—Mrs. H. E. Christenberry presiding at Hermitage Hotel

MEDICAL SOCIETIES

Davidson County:

February 15—"A Survey and Comparison of Gastric Cancer," by Dr. E. L. Rippy. Discussed by Drs. Barney Brooks and W. D. Haggard.

February 22—"Peptic Ulcer: A New Method of Treatment," by Dr. Ralph Herz, Cleveland, Ohio.

March 1—"Benign Masquerades of Gastric Carcinoma," by Dr. George B. Eusterman, Mayo Clinic, Rochester, Minnesota.

March 8—Case Reports: "Chronic Meningococcic Septicemia of Two Months' Duration," by Dr. Frazier Binns. Discussion by Dr. W. O. Vaughan.

"Lymphopathia Venereum," by Dr. D. W. Smith. Discussion by Dr. R. H. Kampmeier.

Dyer, Lake, and Crockett County:

The Dyer, Lake, and Crockett Counties Medical Society met March 2. Scientific program:

1. "Criminal Abortion," by Dr. J. B. Cochran, Dyersburg.
2. "Recognition of Common Disorders of the Ear, Nose, and Throat by the General

(Continued on page 114)

LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

President—Dr. Geo. C. Williamson, Columbia.

Vice-President for West Tennessee—Dr. F. K. West, Rossville.

Vice-President for Middle Tennessee—Dr. Jack Witherspoon, Nashville.

Vice-President for East Tennessee—Dr. Andrew Smith, Knoxville.

Secretary-Editor—Dr. H. H. Shoulders.

Assistant Secretary-Editor—Dr. W. M. Hardy.

TRUSTEES

Chairman and Treasurer—Dr. C. M. Hamilton, Doctors Building, Nashville.

Dr. A. F. Cooper, Goodwyn Institute Building, Memphis.

Dr. E. R. Zemp, Walnut Street, Knoxville.

Dr. Franklin B. Bogart, Medical Arts Building, Chattanooga.

Dr. W. L. Williamson, 915 Madison Ave., Memphis.

COUNCILORS

First District—Dr. L. E. Dyer, Greeneville.

Second District—Dr. S. R. Miller, Knoxville.

Third District—Dr. Hiram A. Laws, Jr., Chattanooga.

Fourth District—Dr. J. T. Moore, Algood.

Fifth District—Dr. John W. Sutton, Petersburg.

Sixth District—Dr. H. S. Shoulders, Nashville.

Seventh District—Dr. C. D. Walton, Mt. Pleasant.

Eighth District—Dr. J. R. Thompson, Jackson.

Ninth District—Dr. E. H. Baird, Dyersburg.

Tenth District—Dr. W. B. Burns, Memphis.

Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

Delegates to the American Medical Association—

Dr. E. G. Wood, Knoxville; East Tennessee.

Dr. H. H. Shoulders, Nashville; Middle Tennessee.

Dr. H. B. Everett, Memphis; West Tennessee.

Alternates—

Dr. E. T. Newell, Chattanooga; East Tennessee.

Dr. J. O. Manier, Nashville; Middle Tennessee.

Dr. E. C. Ellett, Memphis; West Tennessee.

OFFICERS OF COUNTY MEDICAL SOCIETIES

County	President	Vice President	Secretary
Anderson	O. E. Ballou, Clinton	Geo. W. Kelly, Clinton	J. S. Hall, Clinton
Bedford	James N. Burch, Shelbyville	Price Womack, Shelbyville	W. H. Avery, Shelbyville
Blount	G. D. LeQuire, Maryville	W. C. Crowder, Maryville	J. Frank Manning, Maryville
*Bradley	J. Lake McClary, Cleveland	W. C. Stansberry, Cleveland	C. H. Taylor, Cleveland
Campbell	J. L. Heffernan, Jellico	G. M. Rogers, LaFollette	R. J. Buckman, LaFollette
Carroll	O. W. Fesmire, Trezevant		J. H. Williams, McKenzie
Carter	A. R. Collins, Watauga Valley	H. P. Damron, Elizabethton	E. T. Pearson, Elizabethton
*Chester, Henderson, and Decatur	H. T. Pitts, Henderson		L. C. Smith, Henderson
Cocke	J. A. P. Shields, Hartford	W. C. Ruble, Drew A. Mims, Newport	W. E. McGaha, Newport
*Cumberland	E. W. Mitchell Crossville		V. L. Lewis, Crossville
Davidson	W. B. Anderson, Nashville	M. S. Lewis, Nashviile	J. P. Gilbert, Nashville
*Dickson	L. F. Loggin, Charlotte		R. P. Beasley, Dickson
Dyer, Lake, Crockett	J. O. McKinney, Friendship	J. E. Frazier, Newburn (Dyer) J. P. Moon, Tiptonville (Lake) W. H. Stallings, Friendship (Crockett)	C. L. Denton, Dyersburg
*Fayette, Hardeman	F. K. West, Rossville	B. F. McAnulty, Bolivar	Wiley D. Lewis, Bolivar
*Fentress	C. A. Collins, Wilder	A. H. Crouch, Forbus	J. P. Sloan, Jamestown
Franklin	Geo. E. Bogart, Sherwood	Henry T. Kirby-Smith, Winchester	John M. Hardy, Sewanee
Gibson	John Jackson, Dyer	Robert Morris, Medina	E. P. Bowerman, Trenton
Giles	A. W. Deane, Pulaski	G. C. Grimes, Aspen Hill	J. U. Speer, Pulaski
Greene	Hal Henard, Greeneville	R. S. Cowles, Greeneville	I. E. Phillips, Greeneville
Grundy	O. H. Clements, Palmer	Wm. A. Brewer, Monteagle U. B. Bowden, Pelham	T. F. Taylor, Monteagle
Hamblen	R. A. Purvis, Morristown	D. J. Zimmerman, Morristown	D. R. Roach, Morristown
Hamilton	A. M. Patterson, Chattanooga	S. H. Long, Chattanooga	J. Marsh Frere, Chattanooga
Hardin, Lawrence, Lewis, Perry, Wayne	J. T. Keeton, Clifton	Henry N. Moore, Savannah (Hardin) Leo Harris, Lawrenceburg (Lawrence) Paul Wiley, Hohenwald (Lewis) W. E. Turner, Lobelville (Perry) D. L. Woods, Waynesboro (Wayne)	O. H. Williams, Savannah
*Haywood	F. P. Hess, Bells	John P. Sharon, Gates	Roy M. Lanier, Brownsville
Henry	A. F. Paschall, Puryear	Elroy Scruggs, Paris	R. Graham Fish, Paris
Hickman	Margaretta Bowers, Wrigley	E. C. Mulliniks, Centerville	W. K. Edwards, Centerville
*Humphreys			W. W. Slayden, Waverly
Jackson			E. W. Draper, Gainesboro
Knox	Robt. F. Patterson, Knoxville	R. G. Waterhouse, Knoxville	Jesse C. Hill, Knoxville
Lauderdale	Joe B. Lackey, Ripley		Jas. L. Dunavant, Ripley
Lincoln	R. T. Odom, Fayetteville	W. S. Joplin, Petersburg	R. E. McCown, Fayetteville
Loudon	J. A. Leeper, Lenoir City	J. T. Mourfield, Lenoir City	J. R. Watkins, Loudon
*Macon	D. D. Howser, Lafayette	P. East, Lafayette	J. Y. Freeman, Lafayette
*Madison	J. C. Pierce, Mercer	John E. Powers, Jackson	S. M. Herron, Jackson
Maury	Leon Ward, Mt. Pleasant	H. O. Anderson, Mt. Pleasant	D. B. Andrews, Columbia
McMinn	Boyd McClary, Etowah	C. O. Foree, Athens	D. F. Seay, Englewood
McNairy	E. M. Smith, Selmer	J. R. Smith, Selmer	T. N. Humphrey, Selmer
Monroe	R. C. Kimbrough, Madisonville		David M. Cowgill, Madisonville
Montgomery	M. L. Shelby, Clarksville	Philip L. Lyle, Clarksville	V. H. Griffin, Clarksville
*Obion	M. T. Tipton, Union City	F. B. Kimzey, Union City	W. B. Harrison, Union City
*Overton			A. B. Qualls, Livingston
Polk	Thos. J. Hicks, Copperhill	W. Y. Gilliam, Copperhill	F. O. Geisler, Isabella
Putnam	R. L. Witherington, Cookeville	T. M. Crain, Monterey	Thurman Shipley, Cookeville
Roane	O. H. Coleman, Kingston	F. A. Neergaard, Harriman	J. C. Fly, Kingston
Robertson	W. P. Stone, Springfield	J. W. Wilkison, Springfield	W. F. Fyke, Springfield
Rutherford	John F. Cason, Murfreesboro	R. C. Van Hook, Auburntown	J. A. Scott, Murfreesboro
Scott	D. T. Chambers, Norma	T. L. Phillips, Oneida	Milford Thompson, Oneida
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Williamson	W. F. Roth, Jr., Franklin	B. T. Nolen, Franklin	K. S. Howlett, Franklin
Wilson	J. S. Campbell, Lebanon	R. N. Buchanan, Jr., Lebanon	R. B. Gaston, Lebanon

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* 1937 Officers.

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The following is a list of the standing committees of the Tennessee State Medical Association provided for in the constitution and by-laws and appointed by the proper authority, together with some special committees appointed under the authority of a resolution by the House of Delegates.

Some of the committees are appointed for a definite period. In such instances the appointment of the committeeman expires with the meeting of the House of Delegates in the year stated opposite his name.

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Dr. W. L. Williamson, Memphis.
Dr. John B. Youmans, Nashville.

Practitioner," by Dr. Frank D. Linn, Memphis.

3. "Conservative Treatment of Carbuncles and Boils," by Dr. Bedford F. Floyd, Memphis.

(Signed) C. L. DENTON, *Secretary.*

Greene County:

The Greene County Medical Society met at the Andrew Johnson Club House, Tuesday, March 1, at 6:30 P.M.

Dr. M. A. Blanton presented a paper on "Acute Respiratory Diseases."

Dr. Hal Henard opened the discussion. The following members were present: Drs. C. B. Laughlin, H. W. Fox, Hal Henard, C. P. Fox, C. P. Fox, Jr., M. A. Blanton, R. S. Cowles, L. E. Dyer, H. B. Anderson, R. B. Gibson, and I. E. Phillips.

(Signed) I. E. PHILLIPS, *Secretary.*

Hamilton County:

The following papers are scheduled to be read:

March 17—"Some Therapeutic Measures in Cardiovascular Disease," by Dr. W. A. Reed.

"Some New Ideas Concerning Cardiovascular Disease," by Dr. J. L. Bibb.

March 24—"Avertin as a Basal Anesthetic," by Dr. H. M. Ausherman.

"Streptococci and Allied Throat Infections," by Dr. C. L. Lassiter.

March 31—"Recent Obstetrical Problems," by Dr. Dan Williams.

"Low Back Pain," by Dr. C. T. Read.

"Urological Conditions Common in General Practice," by Dr. C. H. Barnwell.

April 7—"Vaginal Bleeding," by Dr. J. R. Martin.

"Contraception," by Dr. H. P. Hewitt.

"Headache of Ocular Origin," by Dr. A. H. Benz.

Hardin, Lawrence, Lewis, Perry, and Wayne:

The Five-County Medical Society met in Waynesboro on February 22. The following papers were read:

"Hypertension," by Dr. Watt Yeiser, Columbia. Discussion opened by Drs. J. H. Tilley, Lawrenceburg, and Paul Wiley, Hohenwald.

"History Taking," by Dr. C. C. Stockard, Lawrenceburg. Discussion opened by Drs. Dexter L. Woods, Waynesboro, and O. A. Kirk, Linden.

"Present-Day Treatment of Varicose Veins," by Dr. J. A. Kirtley, Jr., Nashville. Discussion opened by Dr. W. E. Boyce, Flatwoods.

Knox County:

February 14—"Physiology of the Ovary," by Dr. M. S. Roberts. Discussion by Drs. Dewey Peters, John R. Smoot, and R. G. Waterhouse.

February 22—"History of Hospitals," by Dr. Chas. Clayton. Discussion by Drs. S. R. Miller and W. S. Austin.

March 1—"The Arterial Distribution Within the Prostate Gland and Its Role in Prostatic Resection," by Dr. J. B. Neil. Discussion by Drs. Barry, Williamson, and Chumley.

Robertson County:

Dr. George C. Williamson, Columbia, was the speaker at the dinner meeting of the Robertson County Medical Society February 15. Dr. Williamson spoke on "Surgery in Children."

Those attending were Drs. W. W. Porter, J. H. Padfield, C. M. Banks, J. R. Connell, J. E. Wilkison, A. R. Kempf, J. S. Hawkins, W. P. Stone, J. S. Freeman, W. F. Fyke, and W. B. Dye.

Washington County:

March 3—"Low Basal Metabolism," by Dr. E. T. Brading, Johnson City. Discussion by Drs. W. M. Bevis and J. G. Moss.

"Review of Treatment of Toxemia of Pregnancy," by Dr. C. W. Friberg, Johnson City. Discussion by Drs. Kyker and Miller.

OTHER MEDICAL SOCIETIES

MIDSOUTH POSTGRADUATE ASSEMBLY

Beginning February 15 and lasting through February 18 the Midsouth Postgraduate Assembly held its fifty-third annual session in Memphis.

Fifty-three years ago this organization started out as the Tri-State Medical Association. It has always been a good meeting, but in the last few years, especially since Dr. A. F. Cooper became secretary, it has come into national prominence and ranks as one of America's best societies. It is intended for the practicing physicians and any physician in good standing in the profession may attend. Every physician can find a group of discussions in which he is especially interested.

Only physicians and surgeons of national repute ever appear on the program.

There were several symposia on the last program. The program was full of the latest information on the practice of obstetrics, rectal diseases, syphilis, emergency surgery, vascular diseases, endocrines, renal calculi, hematology, cancer of the larynx, tuberculosis, hypoglycemia in children, gall bladder disease, poliomyelitis, anemia, otitis media, surgery of the cornea, sulfanilamide, and treatment of wounds.

Each day at noon there are several luncheons. At each luncheon there are two short addresses by speakers on the program. After the addresses about thirty minutes' time is spent in answering questions which have been written out and passed up to the speakers.

On one night during each meeting there is a stag buffet supper and on another night there is an informal banquet followed by an after-dinner entertainer.

The doctors of Memphis have always found something for the visitors to do at times when the program is not going on in the way of school banquets, fraternity banquets, special dinners, etc.

There is nothing left undone. The meaty program is there for you, friends are there to greet you, the Memphis doctors are there to welcome you to anything you like. When the meeting is over you cannot help feeling that you have been exposed to most excellent knowledge laid before you in everyday practical fashion. Also you will realize that you have been made to feel at home and the strongest desire, as you wend your way home, weary but happy, will be to come back again.

J. C. PENNINGTON.

The fourth session of the Tennessee Valley Postgraduate Medical Assembly will be held in Knoxville at the Hotel Andrew Johnson, June 22, 23, 24, 1938. List of speakers is as follows: Drs. Oscar W. Bethea, Clyde Brooks, and Roy Delahoussaye, of New Orleans; Drs. Howard King and W. D. Haggard, Nashville; Drs. A. U. Desjardius and Louis A. Buie, Rochester, Minnesota; Drs. Arthur B. Hertzler, Halstead, Kansas; J. R. Reinberger, Memphis; I. A. Bigger, Richmond, Virginia; Lawson Thornton, Atlanta, Georgia; John R. Caulk, St. Louis, Missouri; Nathan Settel, New York City; Fred W. Rankin, Lexington, Kentucky; Marion Blankenhorn, Cincinnati; Edward J. Stieglitz, Chicago, Illinois; Francis C. Grant, Philadelphia, Pennsylvania; John Theodore King, Baltimore, Maryland.

A full program will be published soon.

VANDERBILT MEDICAL SOCIETY, FEBRUARY 9, 1938

1. Case Report—"A Case of Psychoneurosis with Mental Retardation," by Dr. Frank H. Luton.

A mentally retarded rural girl is treated in the out-patient department with complaints indicating an anxiety and depressive pattern. There is a background of loneliness, insecurity, financial distress and unsatisfied educational strivings. Physical factors such as trichophytosis, chronic tonsillitis, carious teeth played a role. Treatment consisted in the elimination of physical factors, social service, psychiatric interviews, night school classes, and industrial placement in a job suited to her capacity. The results were satisfactory.

The case was discussed by Miss Virginia Kirk.

2. "Experimental Observations on Intramedullary Pressure with Particular Reference to Massive Diaphyseal Bone Necrosis," by Dr. Ralph Larsen.

Three types of experiments were conducted in study: (1) dealing with pressure exerted by vascular system in cannulated marrow cavities in long bones; (2) dealing with effect of adrenaline, ephedrin, pituitrin, and histamine on this pressure; (3) dealing with effect of sustained high intramedullary pressure on viability of bones. It was found that when the intramedullary cavities of long bones are subjected to 180 centimeters pressure of physiologic salt solution for a period of twelve hours or greater, there was widespread necrosis of the shaft in dogs whose epiphyses had not closed prior to experiment and in whom associated infection developed; sequestration of the necrotic shaft always occurred. It was concluded that massive necrosis in acute suppurative osteomyelitis is probably due at least in part to increased intramedullary pressure and that to avoid massive sequestration in this disease, decompression of the marrow cavity before pressure has caused massive necrosis is fundamentally important.

This paper was discussed by Drs. Barney Brooks, George Carpenter, and Herbert Wells.

3. "Herpetic Stomatitis," by Drs. Katherine Dodd, Leland M. Johnston, and G. John Buddingh.

Eighty-eight cases seen in the Vanderbilt Hospital Children's Clinic of a type of stomatitis common in childhood were described. This type is usually known as aphthous stomatitis. Twelve of these cases were investigated experimentally by inoculation of material from the lesions into the cornea of the rabbit. In each instance a purulent keratoconjunctivitis typical of that produced by the virus of herpes simplex occurred. In nine of eleven rabbits to which transfers were made, typical intranuclear herpetic inclusions were found in the infected cornea and in two inclusion bodies were found in the brain. Immunity to a known strain of herpes simplex was demonstrated in six or seven rabbits which survived the infection and was absent in five control animals. The type of stomatitis described is a definite clinical entity with the virus of herpes as the causative agent. It would be better designated as herpetic than aphthous stomatitis.

This paper was discussed by Dr. Ernest W. Goodpasture.

PUBLIC HEALTH ACTIVITIES IN TENNESSEE

Through stimulation from various sources, the physicians of Tennessee are showing an increased interest in the laboratory services available to them through the Tennessee Health Department. All are not aware of the services that may be obtained. For that reason the public health comment this month is to be devoted to a résumé of laboratory facilities offered.

Routine Diagnostic Service

Examination	*Amount and Method of Submitting Specimen*	*Laboratory Container to Be Used*
Blood:		
Agglutination tests	8 to 10 cc. *whole* blood (do not send drops of blood on slide, paper, etc.)	Sterile Wassermann bottle
Typhoid Fever		
Paratyphoid Fevers, A & B		
Rocky Mountain Spotted Fever		
Tularemia		
Typhus Fever		
Undulant Fever		
Culture	8 to 10 cc. *whole* blood	Special typhoid blood culture bottle with media *only*
Typhoid Fever		
Paratyphoid Fevers, A & B		
Plasmodia (malaria)	Thick drop or thin film smear of whole blood	Glass slide
Syphilis	8 to 10 cc. *whole* blood	Sterile Wassermann bottle
Milk:		
Routine	Pint, iced en route to laboratory	Original milk bottle
Bacteriological		
Chemical		

Nose and Throat Cultures:		
Diphtheria	Swab	Diphtheria tube on media
Hemolytic Streptococci		
Scarlet Fever		
Septic Sore Throat		
Meningitis		
Spinal Fluid:		
Meningitis	5 to 10 cc. fluid	Sterile Wassermann vial
Syphilis		
Tuberculosis		
Sputum:		
Pneumonia typing	Characteristic specimen raised by deep coughing. *Saliva is of no value*	Sterile sputum or other container *with no disinfectant*
Tuberculosis	Characteristic specimen raised by deep coughing. *Saliva is of no value*	Special sputum bottle with phenol solution
Stools:		
Culture	Volume no larger than size of small pea. Mix thoroughly with culture media in special container	Special typhoid or dysentery stool culture bottle as indicated
Typhoid		
Paratyphoid A & B		
Dysentery		
Intestinal Parasites	Approximately one-half teaspoonful	Small tin ointment box
Miscellaneous—Pus and Excretia:		
Gonorrhea	Smear from cervix, urethra, or affected part	Glass slide
Vincent's infection	Smear from gums	Glass slide
Rabies:	Head *only*	No laboratory container available. Pack head in ice and sawdust in leak-proof metal container and send *express prepaid* or bring to nearest laboratory
Urine:		
Culture	Volume of urine no greater than preservative in bottle	Special typhoid urine culture bottle *only*
Typhoid		
Paratyphoid A & B		
Water (Bacteriological)	3 to 4 ounces	Special sterile water sample bottle *only*

For examinations not listed above consult the director of the nearest state laboratory.

Physicians residing in a county *with* a full-time health service may procure specimen and mailing containers from the local health department. Physicians residing in a county *without* a full-time health service can procure specimen and mailing containers from the nearest branch laboratory.

Biological Products Available for State-Wide Distribution

Product	*Sizes Available*
Diphtheria Toxin for Schick Test	2 cc. and 5 cc. vials sufficient for 20 and 50 tests, respectively. (Control test material sent only on request)
Diphtheria Toxoid (Alum Precipitated)	5 cc. and 10 cc. vials in single or dozen lots
Diphtheria Toxoid (Heated) for Toxoid Sensitivity Test	5 cc. vial sufficient for 50 tests
Silver Nitrate Waxules	Box of 4 waxules
Sterile Distilled Water	120 cc. and 250 cc. bottles
Typhoid Vaccine (B. Typhosus)	30 cc., 60 cc., 120 cc., and 250 cc. bottles
Typhoid Vaccine (Triple mixture of B. Typhosus, Paratyphosus A & B)	60 cc. bottles (sent only on special request)

The above products may be obtained in:

(1) *Counties with full-time health service* from local health department.

(2) *Counties with no full-time health service* from State Health Department, Nashville.

SUGGESTIONS FOR INTERPRETATION OF LABORATORY REPORTS

Satisfactory specimens must be submitted to the laboratory in containers supplied by the laboratory for your convenience if a satisfactory service is to be rendered.

Specimens are examined only for licensed physicians and local full-time health departments.

The laboratory findings are reported directly to the physician submitting the specimen. The physician and not the laboratory is responsible for the clinical diagnosis of the patients' illness. The laboratory findings should be considered only as an adjunct in the clinical diagnosis. Should the report not confirm clinical findings, repeat specimens should be submitted to the laboratory until sufficient data have been accumulated to make a satisfactory diagnosis.

If a special interpretation is indicated, consult the director of the laboratory issuing report.

The Division of Laboratories makes available laboratory service to assist physicians and health officers in the control and prevention of communicable diseases. This service is provided without cost.

Send specimens prepaid to the nearest state laboratory. There are four state laboratories located as follows:

Central Laboratory, State Health Department, Nashville, Tennessee.

Johnson City Laboratory, Clinic Building, Teachers College, Johnson City, Tennessee.

Knoxville Laboratory, Bureau of Health, 309 Market Street, Knoxville, Tennessee.

Memphis Laboratory, Pathological Institute, Memphis, Tennessee.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

Recent Studies on Some Physiological Phenomena Related to Anesthesia. Schmidt. Current Researches in Anesthesia and Analgesia, January-February, 1938.

The respiratory center, while not sharply demarcated, consists of a group of nerve cells scattered throughout the formatio reticularis of the medulla. These cells are adjacent to the nuclei of the vagus and glossopharyngeal nerves. Impulses from these nerves control both respiration and circulation. Reflexes from the lungs, carotids, and the aorta are described. The muscles of respiration are named and discussed as to their relative importance.

Gasping respiration is a warning of danger. In ether anesthesia lung reflexes stimulate respiration until profound narcosis is produced. Nonirritating anesthetics and drugs produce more severe respiratory depression as this reflex is not produced. In profound anoxemia and respiratory depression or suspension, the respiratory centers are so obtunded that reflexes and stimulants cause no response. Carbon dioxide in oxygen tends to produce more depression.

Resuscitation depends on artificial respiration, the administration of oxygen, and the production of normal blood pressure correcting it if it is too high or too low. After the respiratory center has been reoxygenated stimulants may be administered. Asphyxia neonatorium is due to oxygen want caused by compression of the cord, uterine contractions, and narcotics administered to mother. Oxygen is indicated and as a preventative measure narcotics should be cautiously administered to mother.

DERMATOLOGY

By E. E. BROWN, M.D.
Doctors Building, Nashville

Pemphigus: Treatment with Sulfanilamide—Preliminary Report. Marcus Rayner Caro, M.D., Chicago. Archives of Dermatology and Syphilology, February, 1938.

During the past two years there have been numerous reports of striking results obtained from the use of sulfanilamide in human beings. These results have been gotten in principally staphylococcic, gonococcic, and streptococcic infections. The streptococcus had been isolated from the blood of patients, as was suggested in the article by Welsh, and the author used it in two cases of pemphigus with very good results. Neither of these cases have been observed long enough to ascertain just what the ultimate results will be, but previous to this practically all cases have been fatal.

INTERNAL MEDICINE

By R. B. Wood, M.D.
By D. R. Thomas, M.D.
Medical Arts Building, Knoxville

Ulcer Recurrences Attributed to Upper Respiratory Tract Infection: A Possible Illustration of the Shwartzman Phenomenon. Crohn and Shwartzman. American Journal of Digestive Diseases and Nutrition, January, 1938.

Of the various factors contributing to recurrences of ulcer activity after remission or apparent cure the most important are (1) dietary indiscretion; (2) overactivity—physical or psychic—leading to fatigue or exhaustion; (3) abuse of alcohol; (4) nicotinism, particularly the misuse of cigarettes; (5) seasonal incidence; and (6) closely affiliated with the former—upper respiratory infections. The authors consider that all these play a part, and state that there are no dissenters as to the role of infection in predisposing or actually causing recurrence of ulcer.

Unable to quote exact figures, they feel that Emery and Monroe underestimate the frequency with which infective agencies cause a lighting up of a healed ulceration. Emery and Monroe state that 167 of 1,279 cases were due to it. Crohn and Shwartzman feel it to be almost hopeless to try and maintain quiescence of an ulcer in the face of susceptibility to recurrent head colds or sinusitis. They quote the unusually large number of ulcer hemorrhages seen during the relatively severe influenza epidemic in February and March of 1937. The relationship of la grippe and ulcer hemorrhage became such an alarming fact that all latent ulcer cases were warned to avoid coughs and colds.

The authors favor the assumption of the theory of local tissue reactivity. This theory developed from clinical observations is based on the findings that whatever the primary cause of ulcer may be, there are commonly found secondary bacterial invaders in the ulcer beds. These bacterial invaders may be responsible for the lasting state of reactivity in the ulcer tissue. Once this state of reactivity exists, viruses and bacteria in locations distant from the ulcer site may be able to produce injury to the ulcer by way of the general circulation. They cite Karsner, Ecker, and Jackson as having successfully produced local tissue reactivity in the gastric mucosa.

The Cause of Death in Coronary Thrombosis with Special Reference to Pulmonary Embolism. Eppinger and Kennedy. A. J. Med. Sciences, January, 1938.

The finding of frequent pulmonary infarction at autopsy in patients dying of coronary thrombosis led the authors to investigate the records of two hundred consecutive cases of the disease—all proven by autopsy.

These cases were divided into three groups: sixty-four of sudden death, 107 of congestive failure, and twenty-nine of miscellaneous causes. The common experience is that fatal termination of the disease is sudden. Accepted explanations of these abrupt deaths are ventricular fibrillation, complete heart block with Stokes-Adams attack, and rupture of the myocardium. Eppinger and Kennedy feel that massive pulmonary infarction should be added to these causes.

Of the 200 cases, sixty-four died suddenly; thirty-four or seventeen per cent had insufficient pathologic changes to account for the sudden death and were labeled ventricular fibrillation; fifteen or 7.5 per cent showed myocardial rupture; two died in Stokes-Adams attack. In thirteen or 6.5 per cent death appeared similar to cessation of effectual heart action or to pulmonary infarction. Autopsy gave almost indisputable evidence in every case that pulmonary infarction was the probable cause of death since either one or both of the main pulmonary arteries were obstructed by ante-mortem thrombi. In all cases but one passive congestion of the lungs was present before death.

Congestive heart failure is the commonest cause of death in these cases. In this series 107 or 53.5 per cent presented such signs. In thirty-five or 32.7 per cent of these cases of congestive failure evidence of moderately extensive pulmonary infarction was found at autopsy and was further validated by the clinical histories.

There were twenty-nine cases, 14.5 per cent of the total, who died of causes apart from or only remotely related to the coronary thrombosis. Only three of these cases died of systemic emboli, two mesenteric, and one cerebral. The balance was not of embolic nature.

In the 200 cases sixty-two or thirty-one per cent showed post-mortem evidence of embolism. Only forty-nine or 24.5 per cent of these (forty-six pulmonary, two mesenteric, one cerebral) were considered as the main cause of death. When the infarction sites were studied, it was found that in thirty-six of the sixty-two cases the infarction was pulmonary alone, in thirteen systemic alone, and in thirteen both systemic and pulmonary.

Thus we have in the first group, those listed as sudden death, 6.5 per cent of these deaths were accounted for by pulmonary embolism. In the second group, those with congestive failure, pulmonary embolism was the most important contributory cause of death in 32.7 per cent or thirty-five cases. In the third group only three died of embolism, and two were mesenteric and one cerebral.

OBSTETRICS AND GYNECOLOGY

By Hamilton V. Gayden, M.D.
Suite 234 Doctors Building, Nashville

Hemorrhagic Disease of the Newborn. Carl T. Javert. American Journal of Obstetrics and Gynecology, February, 1938.

Hemorrhagic disease is either present at birth or occurs soon thereafter. Consequently the accoucheur is responsible for its recognition and treatment. Stander has maintained that the total infantile mortality rate should include all deaths, regardless of cause, occurring in the first fourteen days of life. "For these reasons, the present study of hemorrhagic disease of the newborn was made, placing emphasis on obstetric and parturitional factors that appear to be contributory."

A study of seventy-two cases of hemorrhagic disease, occurring in 11,303 infants, is presented. The incidence of hemorrhagic disease is 0.773 per cent in the hospital and 0.304 per cent in the outdoor service of the Woman's Clinic of the New York Hospital. Parturitional factors found by the author are: prolonged or severe labor, anesthesia and analgesia, and excessive loss of blood during labor. Other influencing factors were age, antepartum complications, and maternal debility. The fetal factors were: immaturity and prematurity, the need for resuscitation indicating anoxemia, and the prolongation of the bleeding time.

How does labor influence hemorrhagic disease? Physiologically, each uterine contraction forces blood from the placenta into the fetal circulation, raising both arterial and venous tension. The resulting engorgement and congestion is a matter of degree and should the forces of labor be unusually severe there is actual rhexis of the vessels. This endothelial asthenia is more pronounced in immature infants, for their circulatory apparatus is likewise immature. The majority of the infants were two weeks from term, while 9.7 per cent were premature. Thus immaturity and prematurity presented definite influence in increasing the incidence.

The curative value of human blood in hemorrhagic disease is almost a specific; the beneficial substance is not known. When sedation rest of the bleeding organs and intramuscular blood fail transfusion is indicated. The mother is an undesirable donor.

The total fetal mortality statistics show that 2.5 per cent of 439 neonatal deaths were due to hemorrhagic disease.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Unilateral Congenital Anophthalmos with Orbitopalpebral Cyst. M. Rosenbaum. Archives of Ophthalmology, February, 1938.

Rosenbaum reports a case of congenital anophthalmos of the left eye associated with an orbitopalpebral cyst in which the cyst was removed and examined pathologically. Roentgen examination revealed rudimentary frontal sinuses; the left orbit was smaller than the right, and there were a cataract and irregularity of the optic foramen on the left. The right eye was normal. The author discusses the origin of these defects and states the following conclusion:

"Every idiogenetic malformation has its ontogenetic characteristics, which are inherent in its gametes. It is important to note that such embryonal end result is not pathological, but only differentiated, as a result of arrest of development."

PEDIATRICS

By John M. Lee, M.D.
Doctors Building, Nashville

Cardiac Complications of Acute Hemorrhagic Nephritis. Mitchell I. Rubin, M.D., and Milton Rapaport, M.D., Philadelphia. Amer. Jour. Dis. of Children, February, 1938.

In a four-year period fifty-five patients were admitted to the Children's Hospital with acute hemorrhagic nephritis, fourteen of whom showed cardiac involvement during the acute stage of their illness. Cardiac disease was the most frequent complication in this series.

Reports of these cases show that the clinical evidences of cardiac involvement and failure were as follows: (1) dyspnea, tachypnea, and cough; (2) cardiac enlargement; (3) muffled heart tones; (4) rapid heart rate; (5) murmurs, usually a mitral systolic murmur; (6) gallop rhythm; (7) enlargement and tenderness of the liver; (8) engorgement of the venous system; (9) pulmonary edema; (10) peripheral edema; (11) electrocardiographic changes indicative of myocardial damage.

In acute hemorrhagic nephritis two factors affect the heart adversely. The first of these is the infection which causes the nephritis. The second is hypertension which is the agent immediately responsible for impairment of cardiac function. Whether or not heart failure results is dependent on the extent of myocardial damage and the degree of hypertension.

There were two deaths in this series of fifty-five cases, both due to cardiac failure. Hence, this suggests that any case of acute hemorrhagic nephritis may develop cardiac failure.

In the average case with a normal heart function fluids are forced, even in the presence of edema, and if severe acidosis exists sodium lactate is advised. Repeated blood pressure readings should be taken and should hypertension develop fluids should be restricted to 750 to 1,000 cubic centimeters per day since excess fluid intake increases blood pressure, adds to the load on the heart, and may precipitate a cardiac catastrophe. After the blood pressure returns to normal fluids may be given in liberal amounts.

In cases of acute hemorrhagic nephritis with hypertension it is important to control the hypertension to prevent both the encephalopathic syndrome (convulsions) and cardiac failure. Hypertension in this disease is believed to be due to vasospasm, and the authors used magnesium sulphate to relieve this. They gave two-tenth cubic centimeters of a fifty per cent solution per kilogram of body weight by intramuscular injection, repeating the dose at four-hour intervals as needed. Should coma or drowsiness result from retained magnesium in cases with low urinary output, the soluble calcium salts are employed as an antidote.

To stimulate diuresis fifty per cent solution of glucose was given intravenously.

When evidences of cardiac damage appeared, digitalis was used in addition to magnesium sulphate and restriction of fluids. Patients showing heart failure were digitalized by the rapid method, forty-five milligrams of powdered leaf per kilogram of body weight being given hypodermically as fat free tincture in a period of twelve hours. Sedation (morphine) was valuable in cases showing any degree of heart involvement. Oxygen seemed helpful in patients with respiratory symptoms caused by heart failure.

The article is illustrated with case histories and charts.

ROENTGENOLOGY

By **Franklin B. Bogart, M.D.**
Medical Arts Building, Chattanooga

Giant-Cell Tumors of the Spine. G. E. Richards, M.B., F.R.C.P., F.A.C.R., and A. C. Singleton, M.B. Radiology, Vol. 30, No. 1, p. 43, January, 1938.

Condition first described by Nelaton in 1860. British literature describes this tumor as "myeloid sarcoma" and American literature as "giant-cell sarcoma." There is still some disagreement whether or not a malignant variety exists.

While all such tumors are comparatively rare, the usual type shows involvement of the epiphysis, is central in origin and expansive in type, and is frequently asymmetrical, one condyle only being involved. The cortical destruction and expansion of the periosteum with the new bone formation gives the "blown out" appearance. The demarcation between the tumor and the normal bone is clear cut. Coarse, bony trabeculae throughout the tumor give it the loculated appearance in radiographs.

There is a second type, less numerous, showing osteolysis with complete absorption of the cortex and no attempt at bone formation. The demarcation between the tumor and the normal bone is not very sharp and no trabeculation is present. These tumors are more rapidly growing than the first type and are often mistaken for malignant tumors.

Allowing for anatomical differences giant-cell tumors in the spine present the same characteristics as other giant-cell tumors. The disease may arise in part of the vertebra and extend by direct extension. There seems to be a special tendency for pedicles and transverse processes to be involved. The cartilage of the intervertebral disc is seldom involved. Both types described above may be found.

Three cases are reported. One each of the above types and an illustration of a so-called malignant type which probably represents a sarcoma. The value of irradiation in the true giant-cell tumor is pointed out.

Differential Diagnosis

In the spine, particularly, there are times when a diagnosis is different. Some lesions to be differentiated are: Hemangioma of the vertebral body, while usually producing perpendicular striations without cortical expansion, may at times present globular loculation, suggesting benign tumor. Ewing's tumor of the fifth lumbar vertebra has been found to resemble giant-cell tumor. Metastatic carcinoma of the vertebral body has been seen which closely resembled giant-cell tumor. When such a lesion involves a single vertebra the differentiation may be difficult.

Conclusions

1. Two types of benign giant-cell tumor of the spine are described and some of the difficulties of radiological diagnosis in each type are discussed.
2. Two microscopically proven cases of benign giant-cell tumor of the spine, illustrating the different types of tumor, are reported.
3. The value of radiation treatment in benign giant-cell tumors of the spine is indicated.
4. One case of malignant giant-cell tumor of the spine is also reported.

SURGERY—GENERAL AND ABDOMINAL

By **Battle Malone, II, M.D.**
1400 Monroe Avenue, Memphis

Immediate or Delayed Treatment of Acute Cholecystitis, Liver Shock, and Death. Henry W. Cave, M.D. Surg., Gyn., and Obs., February, 1938.

The time for operation in acute cholecystitis cannot be safely standardized since individual cases vary greatly. In recent years the advocation of immediate or early surgery in this condition has led to some confusion and the author attempts to clarify this by designating immediate or emergency operations as being synonymous, "early" operations referring to those done after twenty-four hours to seven days and delayed operations as those done after the subsidence of the acute process.

The "immediate" group of surgeons contend that prompt operation results in a lower mortality rate, an easier operation, and fewer complications. They consider an acute gall bladder analogous to an acute appendix. The author contends that these two organs are not comparable since the acute gall bladder rarely perforates into the free abdominal cavity, but results usually in abscess formation if there is perforation.

The "early group." The majority of surgeons can be classed in this group. Of a series of 225 cases of Branch and Zollinger, thirty-four cases were operated upon immediately because of signs of perforation or impending perforation with a mortality of 20.3 per cent. The remaining 195 were operated on an average of 4.7 days following conservative treatment with a mortality of 8.7 per cent. The author admits that gangrene and perforation occur more often than textbooks record, but are less serious than routine cholecystectomy in the acute stage. If the patient with acute cholecystitis shows no improvement after thirty-six to forty-eight hours, then cholecystectomy or cholecystostomy is done.

There are many outstanding surgeons who advocate the "delayed" treatment. Here operation is done during the remission following the acute process.

The subject of liver shock and death is discussed and no definite conclusion is reached concerning the etiology. It is suggested that the following may be directly related to these conditions: (1) sudden release of biliary obstruction; (2) a toxic water soluble protein released by operative procedure; (3) damage to convoluted tubles of the kidney secondary to impaired liver function; (4) a possible cerebral factor.

Preoperative management where a delay of four to six days is possible consists of treatment of respiratory infections if they exist, cleansing of the lower intestinal tract, thorough laboratory examinations, the administration of intravenous glucose, high carbohydrate diet, and blood transfusions pre and postoperatively in jaundiced patients.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.
By G. A. Williamson, Jr., M.D
Medical Building, Knoxville

Tuberculosis of the Kidney. Frank Hinman, M.D. S. G. and O., February 15, 1938.

A review of 181 personal cases is the basis of this communication. He discusses and disagrees with the view that renal tuberculosis is always bilateral, and thinks this teaching has been detrimental to these patients.

The finding of pus and tubercle bacilli in the kidney urine means active renal tuberculosis. Bacilli without pus are suspicious only.

The need for a thorough study of the patient, especially of the lungs, genital and urinary tract, is stressed. Noninstrumental examinations should be complete before cystoscopy is attempted. Functional tests are of value only in proving the sufficiency of the well side. Excretory urograms should rarely be accepted alone in arriving at diagnosis. Retrograde pyelography of the diseased kidney is not necessary, and may prove dangerous. He believes that a centrifuged specimen should be examined immediately, and will often clinch the diagnosis at the examining table. A list of precautions in collecting kidney specimens is laid down.

A sterile pyuria does not necessarily mean tuberculosis, but is often found in pyogenic infections due frequently to nonhemolytic streptococci. This amicrobic pyuria has been known abroad for years. Neoarsphenamine is usually specific for this.

Hinman states that seventy-two per cent of tuberculous urine can be demonstrated by direct smear, ninety-four per cent by guinea pig, and ninety-six per cent by culture. He states that undoubtedly early lesions heal. Of 300 cases studied by the author, only forty-four were bilateral. Preclinical and incipient tuberculosis are medical conditions. When a tuberculous kidney is removed before the bladder is involved, 100 per cent are cured as against sixty per cent when the bladder is involved.

Statistics of the percentage of cures are discussed. Incidence of remaining kidneys to become tuberculous is reported by Wildbolz to be less than one to 100.

The author believes that the clinical form of tuberculosis is unilateral in over eighty-five per cent when diagnosed. Genital and extragenital infections are common in association with renal tuberculosis.

Nephrectomy for renal tuberculosis is rarely an emergency.

Artificial Fever an Adjunct in the Treatment of Neurosyphilis. Norman N. Epstein, M.D., San Francisco. Archives of Dermatology and Syphilology, February, 1938.

The authors have used artificial fever therapy in the treatment of eighty-seven patients with various forms of neurosyphilis. They used in conjunction with the treatment of most of these cases some drug therapy. Fever was produced by the blanket method. The Wassermann reaction of the spinal fluid became negative or showed considerable improvement in about three-fourths of the cases. The colloidal gold curve became normal and improved in about the same percentage of cases. The cell count was decreased in about ninety-five per cent of the cases. The Wassermann and Kahn test reaction of the blood did not respond as well as those of the spinal fluid.

BOOK REVIEW

The Compleat Pediatrician: Practical, Diagnostic, Therapeutic and Preventive Pediatrics. Wilburt C. Davison, M.A., D.S.C., M.D., Professor of Pediatrics, Duke University School of Medicine, and Pediatrician, Duke Hospital; Formerly Acting Head of Department of Pediatrics, the Johns Hopkins University School of Medicine and Acting Pediatrician in Charge, the Johns Hopkins Hospital. Second Completely Rewritten, 1938 Edition. Cloth. Price, $3.75. Durham, North Carolina. Duke University Press, 1938.

This small volume contains more pediatric information than the reviewer has observed in any other one book of several times its size. Practically all the pediatric subjects encountered in actual practice are covered in a brief, concise manner so that it is a very useful work for a ready reference. At the same time its unique form and composition make it a useful book for the student who wishes to study a subject fully.

Sections are devoted to diagnosis, symptomatology, treatment, and prevention. Laboratory tests and therapeutic procedures are given due space. Many tables and charts add to the value of the book.

In order to bring the second addition up to date, advances in pediatric knowledge contained in 7,500 references have been included. This little volume should be included in the library of every student of medicine, general practitioner, and pediatrician.

J. M. L.

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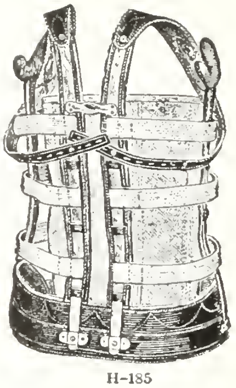

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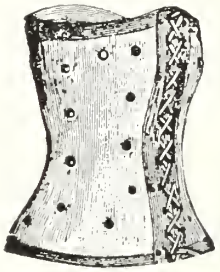

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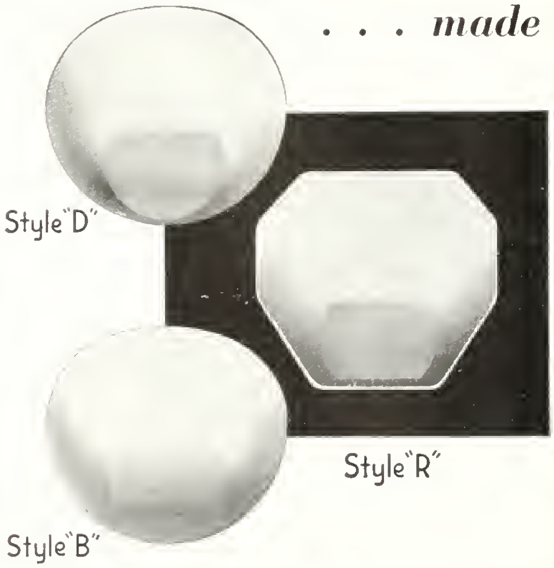

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OF THE

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ISSUED MONTHLY, Under Direction of the Trustees

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OFFICE OF PUBLICATION, 508 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXXI APRIL, 1938 No. 4

THE TREATMENT OF MALARIA*

WILLIAM C. COLBERT, M.D., F.A.C.P., Memphis

IN THE PAST few years there have been definite advances made in the treatment of malaria. In 1924 Roehle developed a technic for the study of malaria in birds, by which it was possible to assess the chemotherapeutic value of antimalarial remedies. Col. S. P. James has been able by the study of induced malaria, by inoculating G. P. I. patients at Horten, England, with mosquitoes infected with the different strains of the organisms, to determine the complete clinical history of these infections, and to determine the chemotherapeutic value of antimalarial remedies.

The chemists of the Bayer-Meister-Lucius Research Laboratories have discovered important synthetic antimalarial preparations, the most notable of which are plasmochin and atabrine. Atabrine is the dihydrochloride of an alkylamine-alkyl-animoacridin derivation. It is a yellowish powder of bitter taste, soluble in water. Its pharmacology and toxicology have been investigated. According to the Department of Research Medicine of the Winthrop Chemical Company, of New York, it has no influence upon cardiac activity, it reduces the temperature of febrile cats, it has no effect upon the uterus, nor upon the uterus, nor upon the small or large intestines of anesthetized animals. No methemoglobinemia, nor other changes in the blood are observed. Absorption from the small intestines into the blood stream occurs rapidly. Excretion in the urine and the bile proceeds slowly.

Kikuth, using malarial-infected Java sparrows, showed that atabrine was a schizontocide, differing from plasmochin, which is a gametocide. Siolo tested atabrine in G. P. I. patients infected with malaria by the inoculation of malarial blood, and found it a very active therapeutic agent, with an unusual capacity for preventing relapses. His recommended dose was 1/10 of a gram three times a day for seven to ten days. He found that larger doses caused gastrointestinal disturbance. Occasionally, a yellow color of the skin was noted, but this was temporary and had no ill effects upon the health, the pigmentation being due to the drug and not to any liver damage.

Muhlen's experience in 122 cases in Hamburg came to the following conclusions:

1. Atabrine is well borne in total dosage of 4.8 grams. The yellow discoloration of the skin is not produced by liver injury, but by the acridine pigment which disappears in two or three weeks.
2. Atabrine acts well in all forms of malaria, better as a schizontocide, than as a gametocide. On account of this, a combination of atabrine and plasmochin is an ideal means of ther-

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*Read before the Tennessee State Medical Association, Knoxville, April 13, 14, 15, 1937.

apy, and prophylaxis. He advises 1/10 of a gram of atabrine with 1/100 of a gram of plasmochin three times a day for seven to ten days.

3. Atabrine is well borne by patients predisposed to or suffering from blackwater fever.

Green treated fifty cases of malaria with atabrine, and forty-five cases with quinine hydrochloride. In comparison he arrived at the following conclusions:

1. Atabrine compares favorably with quinine in ridding the blood of malarial parasites, and in relieving symptoms. So far, it seems superior to quinine in preventing relapses.
2. Atabrine is pleasant to take, but in a small number of cases, it gives rise to abdominal pains. When large doses are used, and the excretion of the drug delayed, a yellowish discoloration of the skin appears which may remain for two to three weeks.
3. The optimum dosage for all forms of malaria is probably 1/10 of a gram per kg. of body weight three times a day for a period of six to seven days. Treatment should be preceded by a purgative, and it is suggested that the urine should be examined for the drug each day, in all cases under treatment. The simplest test for this is: to a small amount of urine in a test tube add a few drops of sulphuric acid and heat; if atabrine is present, a cloudy yellow color develops which is best seen by looking down the test tube from above. Late appearance of the drug in the urine is an indication that there is an accumulation in greater concentration than is desirable. This may give rise to discoloration of the skin and sclerae.

In 1933 a total of 713 cases of malaria were treated in the John Gaston Hospital, Memphis, with atabrine and plasmochin, under the direct observation of Dr. J. B. McElroy, chief of medicine. A careful history, physical examination, and laboratory examinations were made on all cases. The microscopic diagnoses of the blood were made by an experienced technician, and were personally checked by Dr. McElroy. Through the aid of the Social Service Department, all these cases were followed to the end of the year. The analysis of the cases is as follows:

Estivo-Autumnal	530		*Tertian* 183	
Primary	373	(72 %)	112	(61%)
Recrudescent	93	(17 %)	28	(15%)
Relapsing	8	(1½%)	4	(2%)
Recurrent	8	(1½%)	25	(14%)
Single	128	(24 %)	75	(41%)
Double	175	(33 %)	71	(39%)
Multiple	73	(13 %)	3	(2%)
Afebrile after	9	tabs	after 6	tabs
Parasite free after	9.9	tabs	after 11	tabs
Days in hospital	7.3		7.16	

Parasites on discharge—Cres. 8, Rings 3

UNTOWARD SYMPTOMS BEFORE TREATMENT

	Estivo-Autumnal		*Tertian*	
Abdominal pain	48	(49 %)	13	(7%)
Nausea and vomiting	30	(6 %)	8	(4%)
Diarrhea	8	(1½%)	0	
Hemorrhage	9	(1¾%)	1	
Jaundice	5	(1 %)	0	
Hemoglobinuria	2	(¼%)	0	
Coma	55	(10 %)	3	
Algid	5	(1 %)	0	
Delirium	7	(1 % plus)	3	
Psychosis	6	(1 % plus)	1	
No Untoward Symptoms	424		164	
Pigmentation	4		2	
Abdominal pain	5		1	
Total deaths	35	(5 %)		

Since 1933 there have been an additional 987 cases of malaria admitted to and treated in the John Gaston Hospital, Memphis, in the same manner, making a total of 1,717 cases in the past four years. These later cases have not been so thoroughly analyzed as the 1933 series, but it is the impression that they are of similar nature.

The treatment of these cases has been as follows: All coma cases are given quinine dihydrochloride grains, seven and one-half to fifteen, dissolved in 100 cubic centimeters of normal saline intravenously; this is repeated in eight to twelve hours if necessary. When the patients become sufficiently rational to cooperate, they are given the regular treatment for the type of malaria present. All tertian infections are given atabrine 1/10 of a gram or one and one-half grains three times a day for five days. All estivo-autumnal infections are given the same amount of atabrine plus plasmochin 1 100 gram or 1 6 grain twice daily for a similar period of time. The mixed types are also treated by the combination of the drugs in the same dosage and for the same length of time.

SUMMARY

1. Atabrine and plasmochin in the dosage given have proven very satisfactory in the treatment of malaria.
2. No untoward effects have been noted following the use of atabrine, except slight yellowish discoloration of the skin.
3. Only in an exceptional case does plasmochin produce abdominal pain.
4. The period of treatment is greatly reduced, and there is better cooperation on the part of the patient.
5. Relapses are less frequent than in the quinine treated cases.

DISCUSSION

DR. ALFRED GOLTMAN (Memphis): Mr. Chairman and Gentlemen: This series of cases of malaria treated with atabrine and plasmochin is unusual because of the number treated in the series and the admirable follow-up system which was used.

During the past two or three years this form of treatment for malaria has gained considerable prominence. In a great many cases atabrine and plasmochin in combination proved most efficacious, yet I do not consider it a panacea in the treatment of malaria. In my experience relapses have occurred too frequently and especially so several months after the treatment has been completed and no secondary exposure to malaria was encountered, in so far as I was able to determine. In addition, when these patients are acutely ill with high fever preceded by chills, the temperature lasts longer than it does when quinine is used. In people of the Caucasian race atabrine causes a yellow tinge to the skin which lasts for several weeks after treatment has been stopped, and women in particular dislike it considerably.

These drugs should be administered with care, for intolerance to them is not uncommon. At times severe symptoms such as violent abdominal pain, nausea, vomiting, and collapse are produced by plasmochin. Atabrine, besides causing the yellow tint to the skin, often produces dizziness, headache, and urticaria of a rather moderate severity.

The advantage of this treatment is that the time consumed in its administration is much shorter than when quinine is used. In spite of this, I still feel that quinine is the drug of choice in the treatment of malaria and that uniformly better results will be obtained from its proper administration.

SURGERY IN PATIENTS OF ADVANCED AGE*

Barney Brooks, M.D.,** Nashville

THE MEDICAL profession is well aware of the immediate usefulness of their many recent discoveries, but I doubt if many of them are conscious of the more remote effects of these discoveries on society and specifically of their influence in changing the various aspects of the practice of medicine.

Any change in the age composition of the population must influence business, politics, philosophy, and the practice of medicine. We are in the midst of an amazing change in the age composition of the population of this country, which makes it worth while to have something more than a purely personal interest in the diseases of advanced life.

In 1850, life expectancy in this country was about thirty-nine years for white males and forty years for white females. In 1931, the average duration of life had increased to nearly fifty-nine years for white males and to more than sixty-two years for white females. In New Zealand, in 1931, the average expectancy of life had reached the amazing figure of 65.04 years. This increase in total life expectancy is due, for the most part, to the great reduction in infant mortality, but there has been some reduction in the mortality rates of all ages of white males up to fifty-five years, and all ages of white females.

Associated with this decrease in mortality rate there has been a significant decrease in the birth rate, and the simultaneous operation of these two factors produces an inevitable shift in the age composition of the population towards the higher ages. In 1850, 2.6 per cent of the population were over sixty-five years of age. In 1931, 5.4 per cent of the population were over sixty-five years old. If the present trend continues for the same period as the present life expectancy period, the population will then contain 18.5 per cent, or more than twenty-eight million men and women above the age of sixty-five years.[1] Or, stated another way: A white male citizen thirty-five years old in 1937, and subsequently realizing his life expectancy, will find himself in 1970 one of twenty-two and one-half million citizens of the United States who are as old or older than he. This is in contrast with the half million in 1850 or the three and one-quarter millions in 1900 (Table I).

An appreciation of this aging of the population impels an interest in the distribution of diseases in the advanced ages and particularly in the various methods of prevention and treatment of diseases peculiar to old age. The half million old men and women of 1850 could be told that they were too old to be operated upon, but in 1950 the twelve and one-half millions of corresponding ages will consider themselves too young to be so carelessly dealt with.

TABLE I

Age Composition of the Population[1]

Observed for 1850, 1900, and 1930; and calculated for 1950 and 1970

Year	Total Population (Millions)	Under 20 Years (Millions)	Ages 20-49 Years (Millions)	Ages 50-64 Years (Millions)	Ages 65 and Over (Millions)
1850	23.2	12.1	8.9	1.4	0.6
1900	76.0	33.7	32.0	7.1	3.1
1930	122.8	47.6	54.0	14.4	6.6
1950	138.3	40.1	63.2	22.4	12.5
1970	151.4	40.6	59.8	28.6	22.4

This paper is a brief summary of the immediate and remote results of operative treatment of patients more than seventy years of age in the Vanderbilt University Hospital during the period from 1926 to 1935, inclusive. During this period there have been 41,000 admissions; 15,181 operations have been performed in the general operating rooms; and approximately 9,000 operations on the eye, nose, and throat have been carried out in a special operating room used by the ophthalmologic and otolaryngologic divisions. Minor operations performed in the ward dressing rooms and the outpatient service have not been included. Two hundred ninety-three operations have been performed on 287 patients over seventy years of age. All of these patients except two have been traced until the date of death or the age attained in 1936. One hundred thirty-six of these patients were living in 1936.

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*Read before the Tennessee State Medical Association, Knoxville, April 13, 14, 15, 1937.

**From the Department of Surgery, Vanderbilt University School of Medicine, Nashville, Tenn.

The tables show the nature and incidence of the disease treated by operation. A brief summary of the records of all the patients dying in the hospital is given. After obtaining definite information concerning the subsequent course of the 251 patients discharged from the hospital, some method of evaluation of the duration of life was sought. In dealing with a group of patients over seventy years of age, it must be remembered that life expectancy is short and that there are relatively large changes in the life expectancy of successive ages. On the other hand, the gross error in estimating probable duration of life in an individual instance or in a small group is certainly less if this individual or group is in the higher rather than in the lower age class. In dealing with such small groups, it was not considered worth while to use separate tables for white and colored, male and female. The American Experience Life Table was chosen as a standard for estimating life expectancies, because this table is the one most widely used in spite of its rather vague foundations (Table II).

TABLE II

American Experience Life Table

Age	Complete Expectation of Life	Age	Complete Expectation of Life
70	8.48	80	4.39
71	8 00	81	4.05
72	7.55	82	3 71
73	7.11	83	3.39
74	6.68	84	3.08
75	6.27	85	2.77
76	5.88	86	2.47
77	5.49	87	2.18
78	5.11	88	1.91
79	4.74	89	1.66

The seventieth birthday was chosen as the beginning of old age, not only because this age has since the beginning of history marked the span of life, but also because it did not seem appropriate to include in old age individuals who had only just reached the average duration of life. It seemed, also, that selecting only patients over seventy would be more significant in showing a trend than if those between sixty-five and seventy were included. Bailey[2] summarized the previous literature on surgery in the higher age classes in his report of the results of operations upon 185 cases over sixty years of age. Only fifty-one of these cases, however, were over seventy years of age. More recently, Morton[3] has reported the results obtained in operations on twenty-nine cases over seventy years old. Both of these authors believe that there is little evidence for the truth of the popular belief that advanced age is a strong contraindication for the employment of operative treatment. Morton, I believe, quite correctly attributes the credit to the urologists for demonstrating that operative treatment could be successfully carried out in individuals of advanced age even in the presence of infection and advanced renal insufficiency from urinary obstruction by enlargement of the prostate.

TABLE III

Ophthalmologic Operations

	(70-89)		(70-74)		(75-79)		(80-84)		(85-89)	
Type of Operation	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Operation for cataract	47	1	22	0	14	1	11	0	0	0
Iridectomy	4	0	3	0	0	0	1	0	0	0
Operation on eyelid	5	0	3	0	2	0	0	0	0	0
Enucleation of eye	6	0	3	0	3	0	0	0	0	0
Transplantation, pterygium	2	0	2	0	0	0	0	0	0	0
Extraction foreign body	1	0	1	0	0	0	0	0	0	0
Totals	65	1	34	0	19	1	12	0	0	0

Deaths—1

White, male, 79. Cataract extracted. Developed fever seventh postoperative day. Died within twenty-four hours. Autopsy.—Coronary occlusion, with infarction.

Length of Life

Life expectancy, entire group			414.6 years
Life expectancy, group discharged from hospital			409.9
Life realization, entire group	239.5	}	419.9
Life expectancy, survivors in 1936	180.4	}	

TABLE IV

Otolaryngologic Operations

	(70-89)		(70-74)		(75-79)		(80-84)		(85-89)	
Type of Operation	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Mastoidectomy	2	0	1	0	0	0	1	0	0	0
Excision tumor larynx	2	0	2	0	0	0	0	0	0	0
Drainage frontal sinus	1	0	1	0	0	0	0	0	0	0
Excision nasal polyp	1	0	1	0	0	0	0	0	0	0
Totals	6	0	5	0	0	0	1	0	0	0

Deaths—0

Length of Life

Life expectancy, entire group			44.2 years
Life realization, entire group	37.4	}	60.2
Life expectancy survivors in 1936	22.8	}	

TABLE V

GENITOURINARY OPERATIONS

Type of Operation	(70-89)		(70-74)		(75-79)		(80-84)		(85-89)	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Two stage prostatectomy	29	3	14	1	14	1	1	1	0	0
Perineal prostatectomy	2	0	1	0	1	0	0	0	0	0
One stage prostatectomy	1	0	1	0	0	0	0	0	0	0
Resection of prostate	11	0	6	0	2	0	3	0	0	0
Suprapubic cystostomy for benign hypertrophy	8	6	2	2	3	2	0	0	3	2
Suprapubic cystostomy for cancer prostate	4	3	1	1	3	2	0	0	0	0
Suprapubic cystostomy for stone in bladder	4	0	2	0	0	0	0	0	2	0
Suprapubic cystostomy for cancer bladder	1	0	1	0	0	0	0	0	0	0
Suprapubic cystostomy for ruptured bladder	1	1	0	0	0	0	1	1	0	0
Suprapubic cystostomy for carcinoma urethra	1	1	1	1	0	0	0	0	0	0
Excision urethral caruncle	1	0	0	0	1	0	0	0	0	0
Nephrectomy (carcinoma)	1	1	1	1	0	0	0	0	0	0
Excision hydrocele	4	0	4	0	0	0	0	0	0	0
Totals	68	15	34	6	24	5	5	2	5	2

Deaths—15

(1) Male, white, 70. Benign hypertrophy prostate. Two stage prostatectomy. Acute parotitis sixth postoperative day. Died ninth postoperative day. No autopsy.

(2) Male, white, 79. Benign hypertrophy prostate. Two stage prostatectomy. Progressive fall in blood pressure. Died from pneumonia fourteenth postoperative day. Autopsy.—Bronchopneumonia.

(3) Male, white, 82. Benign hypertrophy prostate. Two stage prostatectomy. Died suddenly five weeks after operation. Autopsy.—Coronary occlusion.

(4) Male, white, 74. Benign hypertrophy prostate. Suprapubic cystostomy. Abrupt rise in temperature third postoperative day. Died sixth postoperative day. No autopsy.

(5) Male, colored, 74. Benign hypertrophy prostate. Severe urinary infection. Irrational. Suprapubic cystostomy. Died sixth postoperative day. No autopsy.

(6) Male, colored, 76. Benign hypertrophy prostate. Urethral bleeding. Suprapubic cystostomy. Death in twenty-four hours. Autopsy.—Fibroma prostate; pyelonephritis; bronchopneumonia; pleural effusion.

(7) Male, white, 77. Benign hypertrophy prostate. Suprapubic cystostomy. Progressive decline until death on thirty-eighth postoperative day. Autopsy. — Coronary occlusion.

(8) Male, white, 86. Benign hypertrophy prostate. Acute retention urine. Suprapubic cystostomy. Died from pneumonia. third postoperative day. No autopsy.

(9) Male, colored, 88. Benign hypertrophy prostate. Acute retention urine eighteen hours. Suprapubic cystostomy. Died within thirty-six hours. Autopsy.—Thrombosis pulmonary artery; general peritonitis.

(10) Male, white, 70. Carcinoma prostate. Suprapubic cystostomy. Progressive decline until death on fifteenth postoperative day. Autopsy.—Carcinoma prostate; multiple abscesses kidney.

(11) Male, white, 76. Carcinoma prostate. Suprapubic cystostomy. Fever continued. Died fifth postoperative day. Autopsy. Carcinoma prostate with metastases to bladder, seminal vesicles, retroperitoneal lymph nodes. Bronchopneumonia.

(12) Male, white, 78. Carcinoma prostate. Suprapubic cystostomy. Progressive weakness. Sharp rise temperature ninth postoperative day. Died seventeenth postoperative day. Autopsy.—Carcinoma prostate; abscess of lung; empyema.

(13) Male. white, 80. Ruptured bladder, traumatic. Suprapubic cystostomy. Extensive extravasation of urine into suprapubic spaces. Died twenty-ninth postoperative day. No autopsy.

(14) Male, white, 72. Carcinoma kidney. Nephrectomy. Died twenty-four hours following operation. Autopsy.—Squamous cell carcinoma left kidney with metastases to liver, pancreas, diaphragm, lungs.

(15) Female, white, 70. Radical removal urethral tumor twelve months previously. Local recurrence excised. Died seventh postoperative day. Autopsy.—Adenocarcinoma urethra; pyelonephritis; chronic pleuritis.

Length of Life

Life expectancy, entire group	408 years	
Life expectancy, group discharged from hospital	322.3	
Life realization, entire group	142.5	280.6
Life expectancy, survivors in 1936	138.1	

TABLE VI

ABDOMINAL OPERATIONS

Type of Operation	(70-89)		(70-74)		(75-79)		(80-84)		(85-89)	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Exploratory laparotomy, inoperable cancer	6	3	5	3	1	0	0	0	0	0
Gastrostomy, cancer esophagus	4	1	3	1	1	0	0	0	0	0
Gastroenterostomy, cancer	4	2	2	0	2	2	0	0	0	0
Gastroenterostomy, ulcer	1	0	1	0	0	0	0	0	0	0
Resection of stomach	1	0	1	0	0	0	0	0	0	0
Closure of perforated duodenal ulcer	1	0	1	0	0	0	0	0	0	0
Laparotomy for perforated gall bladder	1	1	0	0	1	1	0	0	0	0
Cholecystectomy	7	1	6	1	1	0	0	0	0	0
Choledochostomy	1	0	1	0	0	0	0	0	0	0
Cholecystogastrostomy	1	0	1	0	0	0	0	0	0	0
Appendicectomy, drainage	1	0	1	0	0	0	0	0	0	0
Operation for acute intestinal obstruction	5	3	3	1	2	2	0	0	0	0
Totals	33	11	25	6	8	5	0	0	0	0

Deaths—11

(1) Male, white, 70. Laparotomy. Inoperable tumor, hilus of liver. Progressive weakness until death on twenty-fourth postoperative day. No autopsy.

(2) Male, white, 73. Laparotomy. Carcinomatosis peritoneum and liver. Progressive weakness until death on twelfth postoperative day. No autopsy.

(3) Female, white, 73. Laparotomy. Carcinomatosis peritoneum. Progressive weakness until death on seventh postoperative day. No autopsy.

(4) Female, colored, 72. Carcinoma esophagus. Gastrostomy. Progressive weakness until death on seventh postoperative day. Autopsy.—Lung metastases; bronchopneumonia.

(5) Female, white, 77. Large mass of cancer obstructing the pylorus. Posterior gastroenterostomy. Convalescence uneventful until twelfth postoperative day. Sudden onset of chill, fever and intense jaundice. Death fourteenth postoperative day. No autopsy.

(6) Male, white, 77. Extensive carcinoma pyloric end stomach. Posterior gastroenterostomy. Died twenty-four hours after operation. No autopsy.

(7) Female, white, 75. Laparotomy. Gangrene gall bladder. General peritonitis. Drainage of peritoneum. Died two hours after operation. Autopsy.—General peritonitis.

(8) Female, white, 71. Fistula between gall bladder and duodenum. Cholecystectomy. Closure duodenal fistula. Found dead in bed ninth postoperative day. Autopsy.—Thrombosis coronary artery.

(9) Male, white, 74. Laparotomy. Volvulus of sigmoid, five days' duration. Perforation of bowel. General peritonitis. Died day of operation.

(10) Female white, 76. Symptoms intestinal obstruction two days. Large abdominal mass. Colostomy. Died fourth postoperative day. Autopsy.—Dissecting aneurysm abdominal aorta.

(11) Male, white, 79. Acute abdominal pain, nausea and vomiting 2½ days. Coronary disease suspected. Observed twelve hours. Laparotomy. Partial obstruction ileum by band. Convalescence uneventful until twelfth postoperative day when patient twelve hours after onset had characteristic attack coronary occlusion. Autopsy. —Coronary occlusion.

Length of Life

Life expectancy, entire group	233 8 years	
Life expectancy group discharged from hospital	161.0	
Life realization, entire group	142.5	98.2
Life expectancy survivors in 1936	61.8	

TABLE VII

HERNIA OPERATIONS

Type of Operation	(70-89)		(70-74)		(75-79)		(80-84)		(85-89)	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Deaths	Cases	Cases	Deaths
Radical cure ventral hernia	2	0	1	0	1	0	0	0	0	0
Strangulated femoral hernia	2	0	0	0	0	0	1	0	1	0
Strangulated inguinal hernia	6	1	2	0	1	0	3	1	0	0
Inguinal hernia, reducible	10	0	8	0	1	0	1	0	0	0
Totals	20	1	11	0	3	0	5	1	1	0

Deaths—1

Colored, male, 80. Irreducible hernia, one week. Cold, pulseless on admission. Operative reduction of hernia. Death nine hours after operation. Autopsy.—Mural thrombi right heart; pulmonary infarction; peritonitis; senile changes.

Length of Life

Life expectancy, entire group..........127.0 years
Life expectancy, group discharged from hospital..122.7
Life realization, entire group..........61.9
Life expectancy, survivors in 1936.......69.5 } ...131.4

TABLE VIII

MAMMARY GLAND OPERATIONS

Type of Operation	(70-89)		(70-74)		(75-79)		(80-84)		(85-89)	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Radical mastectomy	3	0	3	0	0	0	0	0	0	0
Simple mastectomy, cancer	5	0	4	0	1	0	0	0	0	0
Excision recurrent cancer	1	0	1	0	0	0	0	0	0	0
Simple mastectomy, chronic mastitis	1	0	0	0	1	0	0	0	0	0
Totals	10	0	8	0	2	0	0	0	0	0

Deaths—0

Length of Life

Life expectancy, entire group..........71.5 years
Life realization. entire group..........31.8
Life expectancy, survivors, 1936.......39.5 } ...71.3

TABLE IX

RECTAL OPERATIONS

Type of Operation	(70-89)		(70-74)		(75-79)		(80-84)		(85-89)	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Hemorrhoids	3	0	1	0	1	0	1	0	0	0
Fistulae	1	0	1	0	0	0	0	0	0	0
Perirectal abscess	1	1	0	0	0	0	1	1	0	0
Benign ulcer rectum	1	0	1	0	0	0	0	0	0	0
Totals	6	1	3	0	1	0	2	1	0	0

Deaths—1

White, female, 80. Large perirectal abscess, unknown duration. Incision and drainage. Temperature continued elevated; pulse rate increased. Death on fourth postoperative day. No autopsy.

Length of Life

Life expectancy, entire group..........38.2 years
Life expectancy, group discharged from hospital..33.9
Life realization, entire group..........40
Life expectancy, survivors in 1936.......8 } 48.0

TABLE X

NEUROLOGIC OPERATIONS

Type of Operation	(70-89)		(70-74)		(75-79)		(80-84)		(85-89)	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Operation on Gasserian ganglion	8	0	3	0	4	0	1	0	0	0
Craniotomy for fractured skull	2	0	2	0	0	0	0	0	0	0
Laminectomy, chordotomy	1	0	0	0	1	0	0	0	0	0
Totals	11	0	5	0	5	0	1	0	0	0

Deaths—0

Length of Life

Life expectancy, entire group..........71.0 years
Life realization, entire group..........36.2
Life expectancy, survivors in 1936.......40.4 } 76.6

TABLE XI

OPERATIONS FOR CIRCULATORY DISEASE

Type of Operation	(70-89)		(70-74)		(75-79)		(80-84)		(85-89)	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Amputation for gangrene	6	1	4	0	2	1	0	0	0	0
Operation for varicose veins	4	1	3	0	1	1	0	0	0	0
Ligation vein for gangrene	1	0	1	0	0	0	0	0	0	0
Totals	11	2	8	0	3	2	0	0	0	0

Deaths—2

(1) White, male, 77. Extensive gangrene leg one week's duration. Guillotine thigh amputation. Died twenty-four hours after operation. Autopsy.—Marked arteriosclerosis; bronchopneumonia.

(2) White, male, 75. Chronic ulcer leg excised, using local anesthetic. Chill, high fever, seventh postoperative day. Died within twenty-four hours. Autopsy.—No satisfactory cause of death found.

Length of Life

Life expectancy, entire group..........77.8 years
Life expectancy, group discharged from hospital....66.0
Life realization, entire group..........27.0
Life expectancy, survivors in 1936.......6.6 } 33 6

TABLE XII

OPERATIONS FOR SUPERFICIAL NEOPLASMS

Type of Operation	(70-89)		(70-74)		(75-79)		(80-84)		(85-89)	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Excision epithelioma face	10	1	5	1	4	0	1	0	0	0
Excision melanoma face	2	0	2	0	0	0	0	0	0	0
Excision angioendothelioma face	1	0	0	0	0	0	1	0	0	0
Excision sarcoma face	1	0	1	0	0	0	0	0	0	0
Cavernous hemangioma face, ligation carotid artery	1	0	0	0	1	0	0	0	0	0
Excision tumor lip	4	0	1	0	2	0	1	0	0	0
Excision epithelioma neck	7	0	4	0	2	0	0	0	1	0
Excision carcinoma gum	3	0	2	0	1	0	0	0	0	0
Excision squamous cell carcinoma hand	7	0	3	0	3	0	0	0	1	0
Excision squamous cell carcinoma vulva	1	0	1	0	0	0	0	0	0	0
Excision mixed tumor parotid	1	0	1	0	0	0	0	0	0	0
Excision tumor chest wall	1	0	0	0	1	0	0	0	0	0
Totals	39	1	19	1	15	0	3	0	2	0

Deaths—1

White, male, 70. Large epithelioma of face destroyed with cautery. Died nine weeks later. Autopsy.—Fibrinopurulent meningitis.

Length of Life

Life expectancy, entire group..........246 years
Life expectancy, group discharged from hospital....237.5
Life realization, entire group..........99.0
Life expectancy, survivors in 1936.......94.5 } 193.5

TABLE XIII

THYROID OPERATIONS

Type of Operation	(70-89)		(70-74)		(75-79)		(80-84)		(85-89)	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Partial thyroidectomy (hyperthyroidism)	2	1	2	1	0	0	0	0	0	0
Partial thyroidectomy (cancer)	1	0	1	0	0	0	0	0	0	0
Totals	3	1	3	1	0	0	0	0	0	0

Deaths—1

White, female, 73. Diffuse toxic goiter. Chronic heart disease. Partial thyroidectomy. Died second postoperative day. Autopsy.—No satisfactory explanation of death.

Length of Life

Life expectancy, entire group..........23.5 years
Life expectancy, group discharged from hospital....16.5
Life realization, entire group..........0.16
Life expectancy, survivors in 1936.......0.00 } 0.16

TABLE XIV

Bone and Joint Operations

Type of Operation	(70-89)		(70-74)		(75-79)		(80-84)		(85-89)	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Amputation (tuberculosis tibia)	1	0	0	0	1	0	0	0	0	0
Osteotomy for osteomyelitis (os calcis)	1	0	1	0	0	0	0	0	0	0
Closed reduction (fractures)	8	0	6	0	2	0	0	0	0	0
Open reduction dislocation (carpal)	1	0	1	0	0	0	0	0	0	0
Totals	11	0	8	0	3	0	0	0	0	0

Deaths—0

Length of Life

Life expectancy, entire group ......79.5 years
Life realization, entire group ......30.0 }
Life expectancy, survivors in 1936 ......56.6 } 86.6

TABLE XV

Incision and Drainage of Infections

Type of Operation	(70-89)		(70-74)		(75-79)		(80-84)		(85-89)	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Incision-drainage infection neck	2	1	2	1	0	0	0	0	0	0
Incision-drainage infection buttock	1	0	1	0	0	0	0	0	0	0
Incision-drainage infection, carbuncle	1	0	0	0	1	0	0	0	0	0
Incision-drainage abscess (flank)	1	0	1	0	0	0	0	0	0	0
Totals	5	1	4	1	1	0	0	0	0	0

Deaths—1

White, female, 74. Extensive infection neck five days' duration. Nitrous oxide anesthesia. Abscess drained. Died suddenly few hours after operation. No autopsy. Death presumably cardiac.

Length of Life

Life expectancy, entire group ......26.9 years
Life expectancy, group discharged from hospital 20.2
Life realization, entire group ......5.3 }
Life expectancy, survivors in 1936 ......9.8 } 15.1

TABLE XVI

Gynecologic Operations

Type of Operation	(70-89)		(70-74)		(75-79)		(80-84)		(85-89)	
	Cases	Deaths	Cases	Deaths	Cases	Death	Cases	Deaths	Cases	Deaths
Oophorectomy (tumor)	1	0	1	0	0	0	0	0	0	0
Dilatation and curettage	1	0	1	0	0	0	0	0	0	0
Anterior suspension uterus	1	1	1	1	0	0	0	0	0	0
Totals	3	1	3	1	0	0	0	0	0	0

Deaths—1

White, female, 71. Complete prolapse uterus. Anterior suspension. Irregular daily elevations of temperature until ninth postoperative day, when patient suddenly developed extreme dyspnea. Palpable pulse disappeared. Died sixteen days following operation. Autopsy.—Extensive bilateral acute bronchopneumonia with pulmonary infarctions.

Length of Life

Life expectancy, entire group ......22.5 years
Life expectancy, group discharged from hospital 14.5
Life realization, entire group ......7.0 }
Life expectancy, survivors in 1936 ......6.2 } 13.2

TABLE XVII

Chest Operations

Type of Operation	(70-89)		(70-74)		(75-79)		(80-84)		(85-89)	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Drainage lung abscess	1	1	1	1	0	0	0	0	0	0

Deaths—1

Male, white, 71. On admission, moribund. Lung abscess; secondary empyema. Empyema drained. Died less than twenty-four hours postoperative. No autopsy.

Length of Life

Life expectancy, entire group ......8 years
Life expectancy, group discharged from hospital 8
Life realization, entire group ......0 }
Life expectancy, survivors in 1936 ......0 } 0

TABLE XVIII

Plastic Operations

Type of Operation	(70-89)		(70-74)		(75-79)		(80-84)		(85-89)	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Death	Cases	Deaths
Plastic operation for burn	1	0	1	0	0	0	0	0	0	0

Deaths—0

Length of Life

Life expectancy, entire group ......8 years
Life realization, entire group ......1.1 }
Life expectancy, survivors in 1936 ......0.0 } 1.1

TABLE XIX

Operations in Advance Ages

Type of Operation	(70-89)		(70-74)		(75-79)		(80-84)		(85-89)	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Ophthalmologic	65	1	34	0	19	1	12	0	0	0
Otolaryngologic	6	0	5	0	0	0	1	0	0	0
Genitourinary	68	15	34	6	24	5	5	2	5	2
Gynecologic	3	1	3	1	0	0	0	0	0	0
Abdominal	33	11	25	6	8	5	0	0	0	0
Hernia	20	1	11	0	3	0	5	1	1	0
Rectal	6	1	3	0	1	0	2	1	0	0
Mammary gland	10	0	8	0	2	0	0	0	0	0
Thyroid	3	1	3	1	0	0	0	0	0	0
Neurologic	11	0	5	0	5	0	1	0	0	0
Superficial neoplasms	39	1	19	1	15	0	3	0	2	0
Bone and joint	11	0	8	0	3	0	0	0	0	0
Infections	5	1	4	1	1	0	0	0	0	0
Circulatory disease	11	2	8	0	3	2	0	0	0	0
Chest	1	1	1	1	0	0	0	0	0	0
Plastic	1	0	1	0	0	0	0	0	0	0
Totals	293	36	172	17	84	13	29	4	8	2
	12.3%		9.9%		15.4%		13.7%		25%	

Length of Life

Life expectancy, entire group ......1900.5 years
Life expectancy, group discharged from hospital 1404.5
Life realization, entire group ......795.2 }
Life expectancy, survivors in 1936 ......734.2 } 1529.4

From the results obtained in this group of 293 operations on patients more than seventy years of age, it appears that surgical diseases in the higher age groups are associated with a relatively high mortality, but that deaths which could be reasonably attributed to operative treatment are remarkably infrequent. In other words, increasing the proportion of patients in the higher age groups in surgical wards would increase the hospital mortality rate, but should not increase the hazard of operative treatment. For example, in the genitourinary operations, in which group fifteen or more than one-third of all deaths occurred, only three patients died who had been considered in sufficiently good condition to have any more than the preliminary suprapubic cystostomy, or nine deaths occurred in patients in whom urinary obstruction made suprapubic cystostomy obligatory, and death ensued before operative treatment of the primary disease could be undertaken. Or, to approach this question from another viewpoint, if only those groups of patients are chosen in which some operative procedure was undertaken solely for the purpose of relief of some distressing symptom, caused by a condition which presumably would not necessarily decrease life expectancy; i. e., reducible hernia, cataract, tic douloureux, gall-bladder disease (without gangrene or perforation), and benign abnormalities of the rectum, there were ninety cases operated upon with one death from coronary occlusion on the seventh postoperative day. Assuming an average of one month's residence in the hospital, this death rate is approximately the same as occurs in the general population at the age of seventy-five. Life realization of these groups was apparently in excess of that calculated from the American Experience Life Table. These results also cast a considerable amount of doubt on the generally accepted opinion that simple confinement to bed during advanced life is dangerous.

The presence of a malignant tumor was responsible for seventy-two, or 24.5 per cent, of the 293 operations. In thirty-one of these cases the malignant tumor was about the face or neck, and the frequency with which epithelioma of the dorsum of the hand occurred, seven times, is interesting. In general, the results obtained in cancer, except intra-abdominal cancer, were remarkably good. In the group of superficial epitheliomata, life expectancy was not alarmingly diminished, and the only death which occurred in the hospital was in an instance of epithelioma of the forehead which had been neglected until extensive invasion of the bone was present. Fifteen of thirty-three abdominal operations were performed for cancer, and six of these patients died in the hospital. Those discharged all died within a year except two who had gastroenterostomies for carcinoma of the pylorus. One of these lived sixteen months, and one is alive four years after operation. The latter is probably an instance of mistaken diagnosis.

The group which is most discouraging is that requiring abdominal section. One-third of these patients died in the hospital, and the survivors have realized only a small fraction of their life expectancy. In those patients who died in the hospital, it was obvious that no death could be attributed to an operation. Six patients had inoperable cancer, three were suffering from intestinal obstruction, and one had general peritonitis from rupture of a gangrenous gall bladder. The remaining death which occurred has a particular bearing on the subject of this paper. This patient was first seen in 1925 with gall-bladder disease. Because of age, hypertension, and complete cessation of symptoms during her stay in the hospital, operation was not advised. The attacks recurred with increasing frequency and severity until 1927, at which time she was admitted in such a condition that operation was unavoidable. The gall bladder was found ruptured into the duodenum. After removal of the gall bladder, convalescence was quite satisfactory for nine days, when the patient died suddenly of coronary occlusion. It seems unavoidable to escape the conclusion that operation should have been undertaken in 1925.

It is also of interest to compare the incidence of some of the surgical diseases occurring after the age of seventy with the incidence of these same diseases in younger patients during the same period. Table XX indicates the relative incidence for a few of the more frequent operative procedures.

TABLE XX

RELATIVE INCIDENCE OF OPERATIVE PROCEDURES FOR SIMILAR CONDITIONS IN PATIENTS UNDER SEVENTY AND OVER SEVENTY YEARS OF AGE

Type of Operation	Total Number of Operations	Operations Upon Patients Over 70 Years Old	Percentage
Appendicectomy	975	1	0.1
Thoracostomy	199	1	0.5
Thyroidectomy, partial	369	3	0.8
Cholecystectomy	337	7	2.0
Stomach resection	43	1	2.3
Excision mammary gland, radical	101	3	2.9
Hernia	542	20	3.6
Excision posterior root (Gasserian ganglion)	49	8	16.1
Cataract	195	47	24.1
Prostatic	152	55	36.1
Totals	2,962	146	4.9

There is without doubt a technic for handling sick old people which improves the chance of recovery. Just as there is a personal fitness for dealing with children, there is also an effective attitude to adopt toward the aged. They need to be surrounded with an atmosphere of optimism, and it is perhaps even more important to guard a patient of advanced age against exposure to an acute respiratory infection than to prevent the exposure of a child to a contagious disease. The importance of careful study and preoperative treatment for existing disease of the heart and kidneys in dealing with patients of advanced age is already generally appreciated.

It is at least amusing to speculate about the effects of the shift in the age composition and the stabilization of the population in number and age composition, on the present setup of specialization in the practice of medicine. In general, the obstetricians and the pediatricians can anticipate a diminution in numbers of births and children. The internists can certainly look forward to an increase in the incidence of the degenerative diseases. The surgeons may reasonably expect an increase in their responsibilities because the incidence of surgical diseases is certainly greater in individuals over fifty than under twenty, but this increase in surgical disease will be unequally distributed among the various surgical specialties. The urologists will be a great deal busier with their much larger group of old men, but the gynecologists will probably not be seriously overworked with their even larger group of old women because gynecologic conditions seem to occur relatively infrequently in the advanced ages. The ophthalmologists may look forward to performing more operations for cataract, but the otolaryngologists will do relatively few operations on the ear, nose, and throat to compensate for the diminution in tonsillectomies and adenoidectomies. The orthopedic surgeons, I believe, are already aware of the great decrease in the incidence of tuberculosis of the hip and spine, and I note that orthopedic literature already shows evidence of an intensification of interest in arthritis of the spine. The neurologic surgeon can anticipate a less discouraging field after the addition of the increased number of operations for tic douloureux, and, finally, the plastic surgeon will have more operations for epitheliomata of the face and less operations for harelip and cleft palate.

I leave for your own reflection the results of the aging of that part of the population who are engaged in the teaching of medicine.

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DISCUSSION

DR. R. A. BARR (Nashville): Beyond expressing my appreciation of this very interesting paper by Dr. Brooks, which I have enjoyed, probably the only thing I can do is to speculate upon the purpose the secretary had in appointing as old a man as I am to open the discussion on a paper of this type.

There is just one point for those of you who are probably a little bit discouraged by Dr. Brooks' paper. We possibly have a very slight tendency toward communism. If we ultimately follow the example of Russia we will dispose of all these old folks, and then the obstetricians and the pediatricians will come into their own.

DR. R. L. SANDERS (Memphis): The theme of Dr. Brooks' paper, as I interpret it, is "Prepare for older age." He could not have chosen one more opportune. This is a subject in which doctors of few or many years should be deeply interested, from both a professional and personal viewpoint.

As the essayist has pointed out, because of the decreasing birth rate and the reduction of infant mortality, within a few years a far greater number of people will live to be over sixty-five years of age. This is now regarded as the period at which old age generally begins, yet to an increasing number of persons beyond seventy many good years of life still remain. In order that elderly patients who require operation may enjoy these late years in normal health, it behooves surgeons to awaken more fully to the need for preparing to deal properly with diseases incident to that period.

Dr. Brooks has shown us graphically the many phases of work in Vanderbilt Hospital on persons of advanced age. In this connection, I should like to review briefly seventy-five cases which have come under my own observation during the past few years. All these patients were over seventy years old, the average age being seventy-four years.

My private practice consists principally of abdominal surgery; it includes no work at all in ophthalmology, only a scattered few orthopedic operations, and a small proportion of procedures on the urinary tract. The majority of my operations are performed on the gastrointestinal and biliary tracts. It is well known that diseases of these two systems constitute a large percentage of the serious afflictions of old age; they comprised 46.7 per cent of the number in this group. Further, the pathologic process is, more often than not, well developed, even to the point of emergency, before the patients come to operation.

Of this series of seventy-five patients twenty-one had operations on the gastrointestinal tract, ten of which were for benign diseases, nine for malignancies, and two for conditions in which the distinction between a benign and malignant lesion was not made. The operative outcome was fatal in six of the twenty-one cases.

Fourteen patients had operations on the biliary tract. Six were for benign affections, five for malignant growths, and three for diseases of undetermined pathology. Four of these patients died following operation.

Surgical procedures were carried out on the genitourinary tract in thirteen cases. Ten were for benign conditions and three for malignancies. There was one operative death in this group. A variety of disease processes, as miscellaneous internal tumors, goiters, cancers of the breast, hernias, hemorrhoids, carbuncles, and diabetic gangrene of the extremities, required operation in twenty-seven cases. Fourteen were benign, ten were malignant, and the nature of the process was uncertain in three. Two of these patients died while in the hospital.

A comparison of immediate mortality figures of the different operations will reveal a decidedly higher percentage of deaths following surgery of the gastrointestinal and biliary tracts. Also, the number of malignancies in these locations is conspicuous. Taking the entire group as a whole, the proportion of twenty-seven malignant to forty benign diseases in persons of this age is still appalling, without including the eight that could not be differentiated. As a result of the long-standing disease, the vital resources of these patients were so depleted as to present a serious handicap to relief by surgical treatment. Moreover, a considerable number of those with benign affections were brought for operation only after the condition had become acute. The thirteen deaths in the seventy-five cases, a mortality of approximately seventeen per cent, are added evidence of the imperative necessity for studying measures to prolong the lives of those already of ripe years.

Dr. Brooks' paper should inspire us to a more thoughtful consideration of this question of the care of the aged. He has reminded us that the span of life is lengthening with each decade, and that there is every prospect of an average expectancy of seventy years for all before the passing of many more generations. The members of the profession must therefore equip themselves for this broadening field of service. In the present situation, surgeons are confronted too often with the problem of attempting to restore to a comfortable existence patients who are almost if not entirely beyond human help. Under such conditions, the surgical mortality will inevitably be high. The problem of the future should be, rather, that of giving these elderly sick people the proper care, both medical and surgical, before their afflictions become too hopeless for relief by any measures.

I feel indebted to Dr. Brooks for his paper, and for the privilege of discussing it. He has displayed commendable foresight in bringing this matter to our attention.

DR. BARNEY BROOKS (closing): I thank Dr. Sanders particularly for the excellent summarizing of the idea in this paper. I wish merely to call your attention to the fact that we are entering, and entering very soon, into a period in which the proportionate number of those in the higher ages will be a great deal in excess of that which now exists.

The interesting fact about this is that this change is something which has suddenly come upon us, and I think it is befitting that this great change is almost entirely due to the efforts of the medical profession: that is the tremendous diminution in infant mortality, the tremendous diminution in tuberculosis, and a tremendously interesting diminution resulting solely from cholecystectomy. The development of the operation for cholecystectomy has been an influential factor in extending the life expectancy into the higher ages, so that the medical profession has brought about this remarkable change. It is an interesting fact to me that the greatest accomplishments have been in the saving of the lives of the younger people, and it seems a remarkable thing indeed that this accomplishment should operate to decrease the numbers in that very group in which the greatest accomplishments have been made in the saving of life, that is the saving of life during the younger ages is not increasing the number of people in the younger ages but it is increasing the people in the upper age groups.

The next thing is that the younger men particularly have to be prepared to meet the surgical problems which come up in old age. From the analysis of these patients I am convinced that the actual danger or the hazard of an operation in a patient beyond the age of seventy is not greatly in excess of that when the patient is thirty, if one takes care to handle that patient in the right way.

Another tremendously important thing in handling these people is that an older person is particularly in need of the creation about him of an atmosphere of optimism and a feeling that he certainly is going to get well, because all of us who have been in surgery very long know that the old man who dies is the old man who lies down on us and positively refuses to get well.

I am very delighted for this opportunity to appear before the Tennessee State Medical Association.

ANGINA PECTORIS AND CORONARY OCCLUSION — DIAGNOSIS AND TREATMENT*

PHILIP H. LEVINSON, M.D., Chattanooga

THE MAN STOPS suddenly. Carefully he turns, goes slowly to the store window, and gazes into the case. He is not, however, seeing any of the articles on display. His face is drawn and anxious, his muscles rigid, his respiration shallow and rather frightened. This attitude he maintains for a few moments, then takes a deep breath and sighs, and proceeds deliberately on his way.

What has happened? Our friend has just experienced an attack of angina pectoris. He may have suffered a severe pain over the precordium, the epigastrium, the neck, or the left arm. Or it may have been simply a sense of constriction in the chest, of inability to breathe adequately, a sinking sensation, a feeling of weakness. But he knows unmistakably that something is wrong, and generally that something very serious is wrong. Experience has taught him that activity will prolong the distress. The ominous nature of the symptom, its content of dread and apprehension warn him against aggravating it. His sensitive nature causes him to retire so that others may not witness his discomfiture. Finally, with the subsidence of the seizure, he again feels well and strong and is capable of continuing as before.

What causes this phenomenon? The answer is not yet complete, but modern studies in heart disease have gone far toward solving the question. In doing so they have provided a rational basis for the diagnosis and treatment of angina pectoris.

The explanation of this symptom, according to most present-day observers in heart diseases,[1] concerns itself with the nourishment of the heart muscle. Briefly stated, angina pectoris is an expression of myocardial ischemia. The anemia of the heart muscle may be qualitative as in pernicious anemia.[2] Angina does occasionally occur in this disease. It is readily relieved by specific treatment. The anemia may be relative as in thyrotoxicosis. Here rapid heart action precludes adequate cardiac nourishment. The anemia may be due to a low systemic pressure as in aortic regurgitation. The heart, being nourished in diastole, is unable to obtain an adequate blood supply because of the low diastolic and hence low coronary pressure in this disease. The anemia may be local as occurs after a coronary infarct in which a small area of the heart surface is deprived of blood. But most important of all, anemia of the heart muscle occurs when there is a spasm, obstruction, or sclerosis of the coronary arteries. Though the myocardial blood supply might still be adequate for the resting period, add the increased demand of the heart for blood as in activity or emotion, and the full picture of angina pectoris becomes evident. Under similar circumstances, allow the coronary artery pressure to be too low, and the same symptom occurs.

The concept of cardiac ischemia as the cause of angina pectoris aids in explaining the time, nature, and occasion of the attacks.

Seizures often occur after meals. Here blood is deviated elsewhere than the heart while an increased strain is put on that organ. Add to this an impediment in the coronary flow, and angina results. Exercise acts similarly. Indeed it is remarkable how often exactly the same amount of exertion brings on the attacks. There is a nervous element in angina. It is conceivable that together with the neurogenic tachycardia a spasm of the coronary arteries occurs and pain results. The spells may occur when the patient is at rest in bed and indeed often do occur late at night or in the early morning. At this time the pressure within the coronary arteries is at its lowest. Electrocardiographic findings on angina suggest a diminished blood supply to the heart. Finally, it is possible to reproduce anginal attacks by inhalations of air containing insufficient oxygen, and this is sometimes used as a diagnostic procedure. But it is not a question of oxygen lack alone, for an adequate glucose supply is important. Cases of angina due to hypoglycemia, relieved by glucose, are being reported,[3] as are cases of hyperglycemia in which adequate insulin is not available to utilize the glucose.

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*Read before the Tennessee State Medical Association, Knoxville, April 13, 14, 15, 1937.

Usually the diagnosis of angina pectoris is made without difficulty. But there are many cases in which the symptoms closely resemble those of gall bladder colic, pleurisy, ruptured peptic ulcer, etc. It is in an analysis of these cases showing referred pain and symptoms apparently unrelated to the cardiac mechanism that difficulty is encountered. Here every means for diagnosis must be brought into play.

The pain of angina is usually located over the sternum or to the left of it, but it may be noted in the epigastrium, left shoulder and arm, or even in the finger tips. At times the right arm, shoulder, and finger are involved. The discomfort may be slight or agonizing, but exercise usually intensifies it.

Quite commonly no pain at all is experienced. Often there is only a feeling of intense weakness or inability to take a deep breath. Or the sensation may be one of constriction or tightness behind the sternum. The patient frequently tells you that these sensations are far worse than pain. One would hesitate to doubt his word after seeing him in such an attack.

He remains quiet, tense, calm, or frightened as his nature dictates. The chest may be rigid or the respirations very quiet.

In a few moments, either naturally or as the result of medication the seizure passes, and the patient feels quite well again.

Examination during or after the attacks often reveals very little. Frequently no abnormal findings at all are elicited.

The blood pressure is usually slightly elevated during the attack. Women with angina are especially prone to be hypertensive. The peripheral vessels may be thickened. Frequently, the heart is enlarged. Systolic murmurs, diminished heart sounds, extrasystoles, rarely gallop rhythm are occasionally to be found.

The electrocardiographic findings are not distinctive. Not infrequently no changes are noted. But if the symptoms are suggestive and definite electrocardiographic evidence of a diseased myocardium is found, the impression that the attacks are angina becomes much more than presumptive. The more common findings are a prominent Q wave in the first or third leads, defective intraventricular conduction, low amplitude, and bundle branch block.

The first procedure upon seeing an individual suffering an attack suggestive of the disease is to administer 1 200 grain nitroglycerine under the tongue. The patient should be warned of the headache, dizziness, and weakness sometimes resulting from the use of this drug.

The dose of nitroglycerine is restricted to the small size for two reasons. First, a dose of 1 100 grain often causes serious reactions and even collapse, and usually the smaller dose is sufficient. Second, nitroglycerine is definitely contraindicated in coronary occlusion, for the blood pressure is already low, and Proger and Ayman have shown that in coronary thrombosis the drug may precipitate heart block and even fatal heart failure.[4] Since it is often difficult to differentiate the two conditions in the early stages, it is well to limit the use of this chemical.

If the pain immediately begins to lessen or the feeling of weakness subsides or the patient states that he can again take a deep breath, it is highly presumptive evidence that the attack is angina. Rarely will gall bladder colic be relieved by the nitrites. After an attack or in the interval between them, if there is still uncertainty as to whether angina is present, we may attempt to bring on the seizures by exercise. Usually, the process of climbing stairs or hopping will suffice to produce an adequate reaction. Deoxygenated air may be tried in an effort to cause a cardiac ischemia. By administering epinephrine hypodermically we can often precipitate an attack.[5] This must not be done, however, without acquainting the patient with the nature of the test. With the first definite sign of anginal pain nitrites should be administered and if necessary morphine. The tendency of epinephrine to cause attacks must be kept in mind when operations under local anesthesia are contemplated on angina patients. Procaine solutions containing epinephrine should not be used.

The diagnosis of angina having been made, treatment is instituted without delay. For we have made measurable advances in the therapy of this condition. This applies as well to the acute attack as to the prevention of recurring seizures. It is certainly true that in the majority of cases we can make the patient more comfortable. Often we can prolong his ability to maintain his economic status. And it is probable that we may be able to lengthen his life span.

The most important of all measures beneficial in angina is rest. This implies spiritual tranquility as well as physical repose. With the onset of each attack, all effort must stop. Often the sensitive individual in the midst of others or the obdurate one when alone will attempt to "work the attack off." This will inevitably tend to lengthen the duration of the seizure and may lead to serious consequences. Rest periods should be enforced after meals, and often for a few minutes before eating they prove relaxing. Mental ease should be facilitated by the administration of sedatives of which I find phenobarbital one-fourth or one-half grain three times daily or bromural five grains tid. most effective. Exercise should be limited and never sufficient to elicit distress. The anginal patient should be warned that he loses all arguments, hence should never indulge in one. Intercourse is permissible if it does not bring on attacks. Alcohol may act as a prophylactic agent, though occasionally it precipitates attacks. If the patient is accustomed to it, a drink before retiring may be beneficial. Tobacco may be continued if no definite evidence of relation to attacks is obvious. If smoking tends to increase the symptom, it should be banned entirely.

The diet should be a balanced nutritious one. The obese should attempt to lose weight as should the hypertensive if overweight. No limitation of protein is prescribed unless definite evidence of nitrogen retention is found. Baths should be not too hot or too cold. Spas are probably beneficial because of the mild relaxing effect of the medicated waters and because any form of vacation often proves of benefit.

Of the various drugs taken to prevent attacks, the purine base diuretics are the most useful. Though Wiggers'[6] and Green's experimental studies throw doubt on their ability to increase coronary flow, most of us have a clinical impression that the drugs are beneficial.

In their administration five factors must be taken into consideration. 1. The efficiency of the drug. 2. The certainty of solubility. 3. Adequate dosage. 4. The danger of gastrointestinal irritation. 5. The time of administration.

Of all the preparations, aminophylline seems most effective. All products, however, are not equally soluble. The usual dosage is one tablet three or four times daily. To insure absorption the drug should be crushed in water before administration. It is more likely to cause gastric irritation or diarrhea than some of the other preparations. Theobromine five grains is more readily tolerated but is less effective. Theobromine sodio salicylate is not used because of the large dosage required. Theocalcin resembles theobromine. Phyllicin is fairly well tolerated and seems to be almost as active as the aminophylline. I like the preparation known as glucophyllin, for it is quite soluble, may be swallowed as a tablet, and rarely causes gastric irritation.

Enough of the drugs must be given to insure results. Large quantities may relieve where small amounts prove ineffective. It has, therefore, become my practice to give two tablets three or four times daily(as of aminophylline or glucophyllin) and lower the dose as the attacks lessen. Since the seizures so often come on after eating, I administer the diuretics about one-half to one hour before meals, hoping that the resulting increased coronary flow will offset attacks occasioned by the excess work entailed in digestion. Of course, this procedure increases the danger of gastric irritation.

It is my distinct clinical impression that with the drugs given in adequate amounts, solubility insured, and at the proper time, the number of anginal attacks are lessened in a large number of individuals.

For the acute attacks the best drug is nitroglycerine 1/100 grain dissolved under the tongue. Often only 1/200 grain is necessary and should be tried. Nitroglycerine may be used prophylactically before some increased activity as before intercourse, evacuation of the bowels, times of emotional stress, if these tend to bring on attacks. It should never be employed as a permit to unusual effort.

Amyl nitrite pearls inhaled act more rapidly and drastically. But they are inconvenient, expensive, and obnoxious to the sensitive person because the odor is disturbing to those about him. Trichlorethylene, inhaled occasionally, acts beneficially and may be given as a prophylactic.[7] It is too early to formulate definite conclusions regarding its value. Alcohol often relieves attacks, but the danger of habit formation is a real one.

If attacks respond readily to nitroglycerine and are numerous, it is worth while to try nitrites as a prophylactic measure. Even though the blood pressure is not elevated, it may prove a valuable measure. Though nitroglycerine or sodium nitrite may be used, I prefer one-half grain erythrol tetranitrate tid. If headaches or dizziness intervene, the dose should be lessened.

Surgery has again assumed prominence in the discussion of the treatment of angina pectoris. Paravertebral alcohol injections are worth while when the pain is intractable. The old operation of cervical sympathectomy proved effective in one case that I recollect. The spells did not disappear, but the attacks were without discomfort in an individual formerly crying for opiates at each seizure. Of three cases of total thyroidectomy, that I have seen, one is comfortable but sluggish, one experiences weak spells, one shows no improvement. All three cases exhibited congestive heart failure with the angina. There appeared to be some improvement in their decompensation, but it is still too early to form final judgment. Even the Boston group are now obviously less enthusiastic about the procedure than they were twenty-four months ago.[8]

Finally, in treating all cases of angina, the personality of the patient must be carefully considered. Practically all are of the high-strung, active, emotional type. Most of them are men and are wage earners in their period of fullest economic advantage or have reached their time of greatest service to society. Every effort must be made to lessen the number of attacks and continue their period of useful activity.

An explanation of his condition must be given him. There is no value in alarming the highly imaginative type, but the careless must be sufficiently impressed. It is not necessary or indeed often advisable to use the term angina pectoris; a "slight heart spell" is usually sufficient and warns without bringing forward a term modern education has made so frightful to the layman.

Angina pectoris is a syndrome, a symptom complex, whether due to spasm of the coronary arteries, lack of dissipation of metabolites or anoxemia of heart muscle, but coronary occlusion is a disease entity with a specific pathology, subjective symptoms, objective signs, and definite electrocardiographic notations. That such a clear clinical picture should have been missed until Herrick described it in 1912 is almost impossible to believe.[9]

The cardinal symptom of coronary occlusion is pain, generally the most severe and disabling known to man. The agony may be so intense that a grain of morphine is insufficient for relief. The actively working heart muscle is deprived of its nourishment, and it makes its wants known in no uncertain terms. At once the damaged heart begins to protect itself. Its beat becomes enfeebled; the blood pressure falls rapidly. Not the slightest movement is made by the patient. His face is cold and pale and probably cyanotic, and his expression is indicative of great fear and anxiety. Frequently urine is passed involuntarily and may contain glucose and casts though the patient is not a diabetic and has no Bright's disease. Occasionally there is no pain, and the patient may feel only an intensification of the marked weakness noted in severe angina. Sometimes pain may be a mild discomfort for days before the onset of the severe attack.[10] Nitrites are ineffective in controlling this distress.

Soon, with the absorption of the infarcted heart muscle, a slight elevation of temperature is noted, and leukocytosis occurs. Over the infarcted area a sterile pericarditis is set up, and for a brief period a friction rub becomes audible.

The electrocardiograph here gives the most valuable aid, for often the pain is in the abdomen or is elsewhere in the chest. The electrocardiographic picture — and these should be taken in series—is usually quite definite. If an anterior infarction occurs, there is a high R T interval in lead one and a low R T interval in lead three. The reverse is true in posterior infarction. The deeply inverted and cove shaped T waves and the deep Q_1 and Q_3 are important. The use of the chest leads have proven invaluable in determining coronary disease, for it often offers the only clue. The absence of Q_4 is diagnostic of coronary occlusion especially if T_4 is upright.

So many cases of coronary disease simulating perforated ulcers, gallstone colics, pancreatitis, pericarditis have been missed that if there is the slightest doubt it is certainly the role of wisdom to take an electrocardiogram before any operative or manipulative procedure is undertaken.

The first requirement in the treatment of coronary thrombosis is rest, immediate and complete. The patient should not be moved, and it is preferable not even to remove the clothing until the acute agony has subsided. From then on his rest in bed should be absolute. All feeding should be done by an attendant. The bedpan is absolutely necessary.

The pain should be controlled with morphine; heroic doses are often necessary. If convenient, oxygen may be administered, as it occasionally helps in allaying the discomfort.[11] Rarely pain is relieved by one of the purine base diuretics such as aminophylline given intravenously. The injection must be given very slowly. Nitroglycerine is contraindicated and may set up fatal myocardial reactions.

As suggested by Levine, I like to use quinidine in the early stages to offset a possible ventricular tachycardia.[12] Its effect in small doses is questionable. Liquid food is given at first. The diet is gradually increased to about five hundred calories, and this light diet is maintained because it tends to lower metabolic requirements and thus lessen the heart's work.

If the pressure falls too low and shock intervenes, it is necessary to use a stimulant. Caffeine continues to be my favorite. Coramine is said to be beneficial.

The arguments against the use of digitalis are many. There is a possibility of cardiac rupture as a result of the vigorous beats. Digitalis often brings on attacks of angina.[13] But definite instances of harm must be very rare. At any rate it is a good policy to administer the drug to any patient showing congestive failure.

The purine base diuretics again may be useful by dilating the uninvolved coronary arteries and facilitating anastomoses. Glucophylline has proved most efficient inasmuch as it acts quite effectively as a diuretic as well.

Intravenous glucose is often of definite benefit. A glycosuria should not preclude its use, for the finding of sugar in the urine is not unusual in coronary thrombosis.

Absolute rest in bed should continue for at least six to eight weeks. Convalescence should be most gradual and careful. For the first few months following the attack all activities should be limited.

Finally, most of the medicaments suggested for angina pectoris should be considered as indications for them arise. Our patient should be gently encouraged in the philosophic life. An attitude of calmness and a pleasant outlook can usually be obtained if the desire to again become a valuable though less active member of society is inculcated.

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DISCUSSION

DR. D. W. HAILEY (Nashville): I enjoyed Dr. Levinson's most excellent paper, and very frankly he has left so little so say on the subject.

The subject of coronary disease is in general the particular reference to the syndrome of angina pectoris, and the infarction we know as coronary occlusion has rightfully assumed a more and more prominent place in our minds and has particularly personal interest to physicians, I think, because a great number of us are candidates. The syndrome of angina pectoris we must, of course, remember has a pathological basis, and we have no exceptions to that rule. True anginal pains are associated with pathological changes in the coronary arteries. The nearest exception might be the anginal pain that occurs in the presence of pernicious anemia. But in those cases the coronary vessel also is involved.

It is probably helpful in clarifying our conception of the case, while we must take a painstaking history in order to evaluate the symptoms, if we try to fit the syndrome to the clinical criteria of diagnosis. There are three diagnostic criteria that are helpful. One is the location and quality of the pain; the second is the nature of the exciting cause, and the third is the subsidence of the attack. The pain of angina pectoris, as Dr. Levinson brought out, typically is substernal; secondly, it is paroxysmal. Usually there is an increase, then a subsidence, more suddenly if the patient is given nitrites or rest. The attacks usually last three to fifteen minutes; if they last much longer than that, coronary occlusion is to be strongly suspected.

The other characteristic is that there is no hang-over, as a rule, in angina pectoris; as a rule, after the attack is gone, the patient feels quite all right.

The other cardiac diseases that may simulate it are numerous. The aortic insufficiency cases may have a stabbing, knifelike pain over the precordia. Cases that have numerous extrasystoles often complain of precordial discomfort, sticking sensations that are not due to systoles. The attacks of paroxysmal tachycardia may produce very severe pains which are rather prolonged and are followed by considerable ache. Those patients also complain of being sensitive over the precordia. Rheumatic heart disease cases also are apt to have sensitive precordia, and those cases may have sticking, sharp, nasty pains. The typical stabbing pain of pericarditis rarely causes confusion.

The amount of exertion that causes the attack is also helpful. A typical attack of angina pectoris may often be brought on by a measurable exertion, and the same amount of exertion may bring it on the next time. Filling the stomach may cause exertion and precipitate an attack, or the presence of anemia or the presence of excitement.

The subsidence of the pain is also helpful, particularly in response to nitrites. A typical attack of angina pectoris, as Dr. Levinson brought out, will respond very promptly to 1/200 of a grain of nitroglycerine under the tongue. Rarely does that have to be repeated.

The question of coronary occlusion comes up, and I think the diagnosis is usually more clear-cut and more readily made. There are a few equivalents to the syndrome of coronary occlusion that may be helpful.

DR. JAMES L. BIBB (Chattanooga): I know you will agree with me that this is one of the best papers we have had at our whole meeting. I want to congratulate Dr. Levinson on everything he said; it was fine.

There are several points that are of interest.

One is heart pain is due to ischemia of the heart muscle. We all agree there. What causes this pain? What are the three conditions particularly in which we see this pain? I see a high degree of aortic insufficiency. In this case the diastolic pressure is always low, and as the heart gets its blood supply in diastole, we have trouble. This is particularly true in luetic aortitis where we have an additional factor of an obstruction to the mouth of the coronary. I have had a case of that just this week, and it has been of very great interest to me. The man had a history of rheumatic heart disease, but he has four plus Wassermann and the rest of his history convinced me that it was a case of luetic aortitis with a diastolic murmur at base of heart (he had a pistol shot in the groin) and a diastolic pressure of zero, and he was having frequent attacks of angina due to inadequate circulation through the coronaries.

Another thing that I think we very often miss is that here is a middle-aged man who has some sclerosis of his coronaries, and yet he could get along pretty well if it were not for the fact that he has a severe anemia. The oxygen-carrying power of his blood is very much lowered because of this severe anemia, and he has pain. Correct his anemia, and that man can usually carry on very well. Of course, the usual cause is anatomical obstruction to the flow of the blood through the coronary circulation.

Another type has interested me very much. Here is a man who tells you that playing golf, along about the second or third hole and going up a slight incline, he has a typical stenocardia pain. He says, "If I persist slowly I get over my pain and can go ahead and finish eighteen holes of golf." Let me warn you to go after that man hard. It is not explained why the coronary circulation seems to improve after persistent exercise. That man ought to be warned about that initial pain that is relieved.

The doctor said rarely does coronary occlusion have no pain. I disagree there. I think a large percentage of our cases of coronary occlusion have no pain. In a large series worked out at the University of Pennsylvania and about the same time at Cook County it was proved that over forty per cent and as high as forty-six per cent of the cases that were watched in the wards that died rather suddenly and that were then autopsied had absolutely no pain, but practically all of them had a sudden dyspnea just before death.

On the other hand, doctors are watching out for coronary occlusion now, and sometimes we make a mistake the other way, we call something coronary occlusion when it is not.

Recently at a meeting of the American Heart Association I had the pleasure of hearing that grand old man, Dr. Herrick, who, by the way, you know was the first man to describe coronary occlusion, and you would think he would be particularly enthusiastic about his own child, yet he gave twenty-eight different things that could happen in the chest and cause pain that were not coronary occlusion. So I think we should be sure of our diagnosis.

Just one thing about the treatment of coronary occlusion. Get that pain relieved as quickly as possible in order to hold down shock. Give a half grain of morphine. Just recently I saw a little thin woman who had three-quarters of a grain of morphine and no relief, and yet five minutes after intranasal oxygen she had complete relief.

DR. W. H. WITT (Nashville): I do not think we get very far by trying to make an accurate distinction between angina pectoris and coronary thrombosis. I agree with Dr. Bibb that Dr. Levinson bore down a little bit too hard upon the pain feature of coronary thrombosis. At the same time, severe substernal pain is so common with coronary thrombosis and is so typical, so to speak, of the pain of angina pectoris that I do not think we are exactly on safe ground in speaking of them as two entirely different conditions.

Now if you ask me to get up some terminology that will cover the whole thing, I cannot accommodate you, but in the original description of angina pectoris there was a typical picture of coronary thrombosis, and any one reading the old-time books like Allbutt's System of Medicine, and others, will at once convince us that Dr. Herrick was not the first man by any means who very accurately described coronary thrombosis. He did, however, stress certain features of an attack that justify the recognition that it has received.

One other point. I do not believe in keeping the great majority of these cases in bed any six or eight weeks. These people die in bed. They do not die from exercise or effort. They die lying right flat in bed.

If you ask me how to draw the line between who shall stay a long or short time, I do not know that I can do it very well for you, but I am quite prepared to believe, without saying I am convinced, that just a little effort, a little something to stimulate the circulation, is better than lying there and worrying to a state of collapse and staying in a state of inactivity for days and weeks at a time.

The patients I have seen die from coronary thrombosis have almost always been patients who have been put to bed and have stayed there two, three, four, five, six, or seven days, and then, without any cause so far as anyone knew, they took a deep breath and were gone.

Just exactly what we are going to do I do not know. We talk about the danger of rupture of the heart. In Cabot's book on Facts About the Heart, as well as I can understand his statistics from the reading, of all the hundreds and hundreds and hundreds of cases of heart disease that he discussed, only two ever had a rupture of the heart. So I feel myself that that feature of it is exaggerated, and I believe we are not justified in keeping these patients in bed so long and in saying that

I am quite willing to acknowledge that I am at variance with the authorities.

DR. P. H. LEVINSON (closing): I appreciate the generous discussion.

Since it was a long paper, I had to hurry to finish within twenty minutes. Because of this I believe some misconceptions have arisen concerning some of the statements.

As to pain, I said, in discussing angina pectoris, that "quite commonly no pain at all is experienced. Often there is only a feeling of intense weakness or inability to take a deep breath. Or the sensation may be one of constriction or tightness behind the sternum." In discussing coronary thrombosis I said, "Occasionally there is no pain, and the patient may feel only an intensification of the marked weakness noted in severe angina." I did not mean to imply that pain is invariably present, as often acute dyspnea is the most prominent symptom of coronary thrombosis.

No one can put an absolute standard as to the length of time the patient with coronary thrombosis should rest in bed. But every outstanding authority advises at least a month, and this is borne out clinically and experimentally. We all have had patients that die even after slightest movements if only a brief period of rest was taken. Though this occurs even after long rest periods, it is the part of wisdom to treat these cases conservatively and certainly as every cardiologist advises.

I agree that rupture of the heart must be a very rare phenomenon, and I doubt that digitalis causes it very often. But I do feel that digitalis often causes an intensification of the anginal symptom.

Finally, the description of disease is not the same thing as its differentation from disease processes showing similar symptoms. As it was with typhus and typhoid, the differentation between angina pectoris and coronary thrombosis is an important discovery. For this, full credit should be accorded Dr. Herrick.

RADIUM—AN INDISPENSABLE MEANS OF THERAPY IN ITS FIELD OF SERVICE TO HUMANITY*

Jere Lawrence Crook, A.M., M.D., F.A.C.S., Jackson

NOTWITHSTANDING the vast number of patients who have been successfully treated with radium since its discovery by Monsieur and Madame Curie, there still exists in the minds of thousands of people a prejudice against its use. This prejudice is due entirely to ignorance, and thereby hangs a tale of apparent surgical indifference. Surgeons should forget their modesty and their fear complex of criticism, and on every public occasion give the public the benefit of their expert knowledge regarding the nature of cancer and its cure if treatment is started sufficiently early. Therefore, I feel that at every medical meeting one or more of the members should raise his voice in warning to the public of the fearful consequences of neglect and delay in seeking treatment for humanity's "Public Enemy Number Two." Heart disease having now become "Public Enemy Number One," cancer has been relegated to second place.

The medical profession has a much better chance of successful treatment in cancer than in heart disease, and yet people are dying by the hundreds of thousands all over the world every year from this dread and horrible malady.

Ever since I summoned nerve and courage enough to purchase fifty milligrams of radium in 1923, I have been more thankful each succeeding month for my purchase.

The existence of radium was visioned but forty years ago. Antoine Henri Becquerel included in his lecture of February 24, 1896, before the French Academy of Sciences, the information that uranium salts would affect a photographic plate in the same way that it is affected by sunlight, even though the plate be enclosed in lightproof paper.

The proof of the existence of radium was brought forward when Madame Curie isolated certain radium salts in 1898. Becquerel accidentally discovered the destructive effect of radium on the human skin. From these beginnings has grown the use of radium therapy.

Radium is not a stable metal. Naturally it is constantly undergoing certain definite changes from uranium, its origin, to radium G (lead), its ultimate product. In these processes of natural change, alpha, beta, and gamma particles, or rays, are given off. We are concerned only with beta particles and gamma rays in radium therapy, for these are the agents which we use in the treatment of disease. We, who use radium, are not concerned about the loss of radium due to the constant change in it. It is estimated that sixteen hundred and ninety years are required to half wear out a given quantity of radium because of the chemical changes that are natural to it.

Diseases Amenable to Radium

The following is a list of conditions in which radium therapy may be employed as a palliative or curative agent. It is not intended to be a complete list of conditions in which radium is used. It is a list of the conditions so often met in general practice, which may be treated with radium more or less successfully.

These conditions are: leucoplakia, birthmarks, moles, warts, nasal polyps, senile keratosis, vernal conjunctivitis, thymicolymphaticus, lupus, keloid, lymphosarcoma, Hodgkin's disease, leucemia, exophthalmic goiter, uterine fibroid, uterine hemorrhage of adolescence and menopause, cancer of the uterus, tongue, lip, cheek, larynx, esophagus, maxillary antrum, rectum, urinary bladder, skin, and breast.

Great pains must be taken to properly diagnose the condition before treatment with radium is undertaken. In the diagnosis of many of these conditions a specimen of tissue should be removed and submitted to a competent pathologist. It is to be remembered that the more nearly a cell approaches the embryonic, the more amenable it is to radium. It is of utmost importance that the patients who are to be helped by radium therapy be seen and treated by the radiologist at the earliest possible moment. The earlier the treatment is undertaken, the greater the chance of cure.

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*Read before the Tennessee State Medical Association, Knoxville, April 13, 14, 15, 1937.

The family physician is the one who must ever be on the alert to detect the beginning of disease. By his unremitting vigilance his patients will have the advantage of modern treatment at the time when success is most likely to be attained. It is to be deplored that there are still too many who seek help from the radiologist, after all chance of cure is passed. But even these patients should have palliation treatment. Such treatment will often prolong life and lessen suffering.

The family physician can be of especial service in recognizing precancerous conditions. Cracked and bleeding lips, precancerous skin lesions, lacerated uterine cervices, bad teeth, vague stomach, intestinal, rectal, and bladder symptoms all should be investigated and properly evaluated without delay. It is the family physician, the general practitioner, who must bear this burden.

There is too much self-treatment among the people of America. This is in part due to folklore, in part to the lay press, and in part to the radio. All of these sources of information relative to health and disease are often highly erroneous and dangerously misleading. Too many of our patients come to us with serious diseases, long after all chance of successful treatment has passed. Many of these patients have consulted and been treated by the practitioners of various cults who have a smattering of scientific knowledge, or deny the existence of disease. These patients are to be pitied and helped as much as possible. They are not to be blamed. Misinformation and ignorance cause much suffering and many deaths in enlightened America.

A complete comprehensive examination should be given to every patient who is to be treated with radium. These examinations are as necessary in this as in all other types of therapy. By such careful examinations we may save our patients and ourselves much disappointment. Successful therapy in any kind of treatment rests upon a foundation of careful diagnosis.

In brief, radium has a threefold action on malignant tissue. It affects (1) the cancer cells, (2) the connective tissue, and (3) the blood and lymph vessels. The action on the cancer cell is shown microscopically by swelling and vacuolization of the protoplasm and by shrinking of the nuclei. This is followed by phagocytosis, absorption, and replacement by a homogeneous connective tissue. This contracts and affects the lymphatic and smaller blood vessels and starves the growth.

I have had two interviews with Dr. Howard Kelly during the time I have had radium and have derived much benefit from my personal conversations with him. As is well known, he was one of the pioneers in America in the use of radium, and at one time had a larger quantity of radium than any other individual in America.

My last talk with Dr. Kelly was at the Southern Surgical Association meeting in White Sulphur Springs, West Virginia, at which time he told me of his change in technique since he first began to use radium for cancer of the cervix, using one large dose, followed in eight weeks by a second dose of not less than 2,400 milligram hours, instead of multiple small doses.

I have pursued the technique outlined at that time by Dr. Kelly ever since, and having secured good results, see no reason to change my method in cervical cancer.

An article in the March, 1936, Radiologic Review, the official publication of the Mississippi Valley Medical Society, by Dr. Thomas E. Jones, of the Cleveland Clinic, still further confirms my belief in the use of a large single dose of radium rather than multiple short-time doses. Dr. Jones states: "There are two entirely different schools of thought, in regard to the method of treatment. In one, the opinion is that it is best to give large massive doses in a short space of time, preferably in one or, at most, two sittings. The other is that it is preferable to give very small doses over a longer period of time. I believe that most of the large clinics in this country favor the former opinion, while the latter group is led by Regaud of the Radium Institute of Paris. This difference of opinion will undoubtedly be settled before many years, after the results of both methods are compared. Standardization of radium dosage for uterine cancer is impractical; dosage and technic must vary with the character and location of the involvement.

"The technic followed in the Cleveland Clinic has varied very little during the past ten years, the only change being that since we have had a larger amount of radium available, we are giving larger doses over a shorter period of time, and we try to give the complete dose at one sitting, whereas previously, the total amount of radiation was given in two doses.

"A review of 610 cases of carcinoma of the cervix in which the patients were examined, treated, and observed personally between the years 1920 and 1935 discloses the fact that in the cases seen in 1935 the disease was just as far advanced as in those seen in 1920, notwithstanding the numerous articles which have been written on the subject and the publicity given it by the American Society for the Control of Cancer.

"It has been correctly stated that for many years women have refused operation for cancer of the cervix because they felt that it was useless due to the frequent recurrences. The successful use of radium within the past fifteen years should have eliminated this objection, but nevertheless the fact still remains that many patients with this condition are presenting themselves too late for a cure to be accomplished. Moreover, the attempt to treat these advanced cases with radium has had a tendency to bring this method into disrepute, because the pain with which the late stages of the disease is attended is believed by the laity to be due to a radium burn. For this reason, many patients refuse radium treatment.

"In most cases, thorough questioning reveals the fact that the patient did consult a physician from four to six months before the disease was recognized and proper treatment instituted. If a patient consults her family physician because of some supposed menstrual disorder, he must assume the responsibility and convince himself by a thorough examination that there is or is not an existing pathologic condition; and if there is, the patient should be treated promptly. Consultation without proper examination leaves the patient with a false sense of security which leads to a delay of several months.

"Investigation has also disclosed the fact that simple hysterectomy for carcinoma of the cervix is still in vogue in many smaller localities, whereas in most of the larger towns and clinics throughout the country, it is generally conceded that radium and X-ray are the preferred methods of treatment. It would seem that ease of communication through medical meetings and journals in the present age should have accomplished more than it has during the past fifteen years.

"I think it quite safe to assume that the major controversy regarding the relative merits of surgical and radiation treatment for cancer of the cervix is settled. It is generally agreed that surgery is excellent treatment for early cases, but these are so few as to be almost disregarded. It is also quite fair to say that radiation will cure as many of the early cases as will surgery without any mortality or morbidity."

Some idea of the results obtained by the Paris Technic of Radiotherapy can be seen from the following statistics from the University of Paris, recently sent by Professor Claud Regaud (associate of the late Mme. Curie) in a personal communication to Dr. Ignatius J. Murphy, of Minneapolis, Minnesota. These represent the 1925-1929 patients—the most recent for which five-year studies are available. All these cases were microscopically confirmed cervical cancers treated by radiotherapy alone. In compiling these statistics it would be remembered that *every* case on whom treatment was started is included. Deaths which followed immediately, patients lost sight of or dying from intercurrent disease during the five-year period were considered as dying from cancer. The number of patients and the five-year results for each stage of the disease were as follows:

THE RADIUM INSTITUTE OF PARIS 1925-1929 STATISTICS

	Patients Treated	Percentage Each Stage	Cured End Five Years	Percentage Five Yr. Cures
Stage 1*	37	8%	28	75.6%
Stage 2	169	37%	72	42.6%
Stage 3	201	43%	64	31.8%
Stage 4	57	12%	1	1.7%

A summary of the above report states: "We believe the results of the five-year study (464 cases with 35.6 per cent curability) are the most favorable as yet reported from a large research institute. They are based on carefully kept records and persistent follow-up examinations. The results secured are the best possible proof of the efficiency of this method (Paris Technic) of radiotherapy."

Dr. Bernard F. Schreiner and Dr. William H. Wehr in their paper on "Experience with Gynecological Malignancies" give the following summary: "It is very evident from a review of these 3,105 cases that the most essential thing in improving results of treatment in gynecological malignancy is early diagnosis. To obtain this, we advocate the education of lay people so that they are aware of the danger signals of abnormal discharge, irritations such as burning and itching in the case of cancer of the vulva, enlargement of the abdomen, pressure symptoms, frequency of urination, constipation, and pain. However, since most of these symptoms occur when the disease is well advanced, it is even more essential to stress the importance of yearly, or semi-yearly, physical examinations which include thorough pelvic examinations.

"Then the responsibility rests with the general practitioner. A general physical examination should include blood and urinary examinations, blood chemistry, inspection, and palpation of the vulva; the inspection of the vagina and cervix with a good light, where possible with the colposcope; tests with Lugol's solution (Schiller); bimanual examination for the size and position of the uterus, and for masses in the adnexa; rectal examination to eliminate the possibility of malignancy in this organ, as well as to palpate the pelvic contents.

"He should acquaint himself with the clinical aspect of some of the inflammatory and so-called precancerous lesions which occur in these parts such as leukoplakia and kraurosis, warts, naevi, and other inflammatory lesions of the vulva, erosions, cervicitis, and inflammatory lesions such as are occasioned by wearing pessaris, and institute proper treatment at once. In cases where bloody and watery discharge are not accounted for, or where the uterus is enlarged, curettage with histological examination of the scrapings should be done. Biopsy of all suspicious lesions is essential.

"These suggestions are given in view of the fact that most cases of vulva, vagina, cervix, and fundus malignancy are associated with abnormal discharges, bloody, yellowish mucoid, or watery, and from the histories these symptoms range from three months to eighteen months or longer, and we have found that it is impossible to appraise the extent of the disease from the duration of the symptoms given. We have seen advanced lesions with short duration of symptoms, earlier and moderately advanced lesions with histories of long duration.

"It is our firm belief that fifty per cent of the mortality could be avoided if the diagnosis could be made earlier."

In the words of Dr. Albert Soiland, of Los Angeles, "radium is indispensable and occupies a field of service to humanity which cannot be successfully replaced or even approached by any other surgical or medical measure within our present range of knowledge."

DISCUSSION

DR. DUNBAR NEWELL (Chattanooga): When papers are read before medical associations they are usually of two characters—either something new that we wish to present to our associates, or something very unique; or a presentation of something we have known but we wish to emphasize and call to the attention of the profession the necessity for their knowing more about that particular subject.

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*The stage of the disease, for statistical purposes, was established by the rules laid down in 1929 by the Subcommittee of Radiotherapy of the League of Nations.

Dr. Crook has given us a most excellent paper on this subject. It is very important for the doctors of this section to know more about the treatment with radium; it is absolutely necessary in using radium treatment for the user to be familiar with it. I think that radium in the hands of the inexperienced is far more dangerous than the scalpel, because the man who doesn't know how to use the scalpel will soon get a hemorrhage that will stop him; unfortunately we do not have any hemorrhages, as a rule, when we use radium. Radium is a very dangerous tool in the hands of the man who does not know how to use it; it is a marvelous tool when properly used.

Dr. Crook has brought out the fact that the patients in this section of the state are very much adverse to the use of radium, they are afraid of radium, they say they will get burns. There is no reason in the world for getting burns if radium is used properly. Of course we have used radium as a palliative measure in so many cases of advanced cancer that it is the cancer which has sloughed and caused fistula and burning instead of the radium, but the patients think it is due to the radium.

Another thing that Dr. Crook has brought out is this fact: that in spite of all of our cancer clinics, in spite of all the work we have done before the public and the laity generally about the treatment and early diagnosis of cancer, we find almost as many cases of advanced cancer today as we found in 1917 when we began the use of radium in the treatment of cancer. That is rather appalling, but I notice that Dr. Jones of the Cleveland Clinic has exactly the same experience and we are getting practically as many advanced cases of cancer of the cervix, as many inoperable cases, today as we were back in 1917.

Dr. Crook again calls attention to something which is so very important. When a patient consults you it is not necessary to think that you have done your full duty by simply asking that patient questions; it is imperatively necessary that you make a careful physical examination. I believe that many patients who have a suspicion of trouble go to their doctor and he holds a consultation but does not make a careful physical examination, because if he did, certainly in many of the cases that we see it would be very evident to him that the patient had cancer of the cervix.

There isn't any question but that we must indict ourselves, because we certainly have been negligent in not carefully examining these patients when they come to us.

Dr. Crook pointed out an important thing in quoting statistics of the Paris Institute. It is so emphatic and we must not forget it. In the No. 1 grades, what do we get? Seventy-five per cent cures. That is just as much as you could cure by panhysterectomy done by the very best men. Panhysterectomy done by the best men would certainly have a mortality of five per cent over a large series, and done by the ordinary man would be ten to twenty-five per cent mortality. By treating the first stage of cancer of the cervix, as Dr. Crook has brought out, you should not have any mortality and you should not have any morbidity. It is certainly evidence in favor of the use of radium in the first stage, with a cure of seventy-five per cent over five years.

What do we get in the second stage? We get forty-two per cent cures in the second stage. In the second stage you must use radium; you cannot use operative measures in the second stage.

What do we get in the third stage? Only thirty per cent cures.

What in the fourth stage, the stage in which burns have been attributed to radium and in which radium has been brought into disrepute? That is 1.7 per cent.

Remember those four figures: seventy-five per cent cures in the first stage of cancer; only forty per cent in the second stage; only thirty per cent in the third stage; and only 1.7 per cent in the fourth stage. Don't you think that is enough to stimulate us to examine our cases when they consult us, and be careful to see that they haven't any malignancy? Just think how many women we can save if we all do that.

DR. FRANK WARD SMYTHE (Memphis): I enjoyed Dr. Crook's paper very much and also the discussion by Dr. Newell. The title is an excellent one. Radium is a necessary agent in the treatment of many malignant and benign lesions.

With the exception of leukoplakic conditions, some angiomata of the skin and keloids, I do not believe that the beta rays of radium are often indicated.

In this discussion, starting from the head down, I feel that radium is indicated in many of the malignancies of the skin and this should be given interstitially. The malignant nevi, or black moles, I think best that they should be removed with the cautery and radium placed beneath where the lesion was, followed with X-ray therapy over the regional lymphatics.

In the oral cavity, the lesion of the anterior and middle portions of the tongue. My best results have been from the use of radium and X-ray. Needles are preferred in this lesion. Likewise my best results from malignancies of the lips and buccal aspect of the cheek. For the posterior third of the mouth, including that part of the tongue, I prefer radons with X-ray therapy.

I lean with McFarlan, of Philadelphia, that the mixed tumors in the region of the salivary glands are not tumors primarily of these glands and in handling these tumors my method is to use, first, interstitial radium entirely and if the growth is not arrested, or if it continues to grow, then assume it is a malignancy, remove the growth and place radium in the cavity.

I am becoming more convinced that our best results in malignancies of the breast are the results of a method which we have been using for the past seven years. Namely, preoperative X-ray followed by radical amputation of the organ and interstitial radium at the time of the operation, then another series of postoperative X-ray.

Relative to carcinomata of the cervix. Dr. Crook has brought out quite clearly that there are two schools of therapy. I did not understand just which school he preferred. He quoted Dr. Jones of Cleveland quite extensively and said that that had been his method for some years, although he quoted the Paris school of Regaud as giving the best results. Personally, having seen Heymann in Stockholm, and being acquainted with the results in his Institution, the Radiumhemmitt, and also having visited and spent some time with Regaud in the Paris Institution, I feel, rather definitely, that the latter procedure is best. Namely, that instead of using radium in broken doses, they give the entire amount of radium therapy continuously, using a small amount of radium widely distributed over a longer length of time for the desired amount of radiation.

Dr. Healy of the Memorial Hospital of New York has given us a definite improvement in helping these malignant cervices, namely, that the X-ray therapy is given first.

Briefly, our method of handling these malignancies is as follows: Cleansing douches are given daily and the X-ray started at once. Having found that many of these malignancies are quite sensitive to X-ray, when they are half through the X-ray therapy, the patients are examined again. If there is a marked decrease in the size of the lesion and apparently a stenosis of the cervix has taken place, then radium is used and the X-ray series continued after its use. If, however, such is not the case, a full course of X-ray, approximately 4200 r units, is given before the radium is used. I use five foci for the radium. One across the cervix, one in the cervical canal, one throughout the uterine cavity and one in each vaginal fornices.

My average dose of radium in these cases is 7200 mm hours. Of course, as I mentioned before, no beta rays are used, only the gamma ones. Two months after this therapy, the patient is again examined and depending upon the results will be whether another series will be given.

It might be said that I am overtreating some of these cases, but I have had such excellent results with this method, and knowing that we are treating a hopeless disease, unless we are able to arrest it, I have been afraid to limit my radium dose to 4800 or 5000 mm hours.

DR. LUCIUS E. BURCH (Nashville): I desire to congratulate Dr. Crook on his excellent paper. I will limit my remarks to cancer of the cervix and cancer of the body of the uterus. I should like to emphasize the following—that any woman, after the age of menarche, who has an abnormal discharge of any kind, is entitled to a pelvic examination. If this procedure were carried out, as suggested by Dr. Crook, cancer would be detected much earlier. I am of the opinion that the cancer cases in the Vanderbilt Clinic are coming in at an earlier stage than they did several years ago, and I attribute this to the benefit of cancer education.

Radium is a dangerous instrument if improperly used, and is capable of doing a great deal of harm. I understood Dr. Crook to say that radium has no mortality. I cannot concur with him in this remark. Radium has a mortality and a morbidity, even in the best of hands. Radium is contraindicated where there is an associated inflammatory condition of the appendages. If used under these conditions, serious consequences might be the result.

Radium is also contraindicated in the great majority of Group IV cases. X-rays should be used here rather than radium. It is in this group of cases that the profession has gotten a bad name among the laity, especially where a recto- or a vesico-vaginal fistula has followed the application of radium.

In cancer of the body of the uterus I prefer operation to radium. A few of the clinics in the country, however, are obtaining good results in the treatment of cancer of the body of the uterus with X-ray and radium. In Group I and Group II cases, it is our custom, unless there is some contraindication, to use the maximum dose, from 5000 to 7500 milligram hours. In Group III smaller doses are indicated. And in Group IV, X-ray and not radium should be used.

The sedimentation test is most reliable for determining the dosage and the time for the application of radium. A low sedimentation usually means that radium should not be used at that particular time, and I would suggest what has already been brought out—that X-ray therapy be carried out first and then, after the infection in the cervix has cleared up, to use radium. In a large number of clinics, the X-ray is used first and then the radium. They should certainly be used in conjunction with one another, although in the past the X-ray has added only about two per cent in effecting a cure after radium or in conjunction with it. It is hoped (and claimed by some men) that the new powerful deep X-ray machines will increase this to five or even eight per cent.

DR. W. T. BLACK (Memphis): Mr. President and Members: Certainly Dr. Crook's paper is very timely and well presented. Any disease that is causing 140,000 deaths a year, coming second as the cause of death in this country, is worthy of consideration. Certainly the public cannot be educated through medical societies or through the doctor. It depends upon the press and it depends upon the women of this country. Right now we have a campaign carried on by the women of this country through the American Society for the Control of Cancer that I believe will educate more people regarding cancer than any undertaking that has so far been made.

When you come to cancer of the cervix, I believe that the majority of cancers can be prevented by the proper care of the cervix in women. These lesions, these lacerations and infections of the cervix, if taken care of, are very likely not to develop into cancer, because we know that ninety per cent of women who have cancer of the cervix have had children, have had lacerations and infections. If these are cleared up, cancer can be reduced to a minimum in the cervix.

The curability of cancer depends upon the education of the people, I think, and by their coming early. I believe that people are coming earlier now than they did four or five years ago for examinations and treatment. Yet there is a group of people who do not read the papers or attend meetings of any kind that it doesn't seem possible to educate. Ignorance and poverty seem to go hand in hand in the large number of cases coming late; they have not been properly informed as to the need of pelvic examinations.

Doctors also are to blame somewhat for the large mortality in cancer cases. We see cases that have been sent to us that tell us that the doctor has been treating them for six months or a year for hemorrhages. You ask them if they have been examined and they tell you no. If he would only examine the patient he could send her early and the curability would be much higher.

When you speak of curability of cancer you should not say that cases are cured in five years. Recently I have had a case recur that had been symptomatically well for seven and a half years. Dr. Geo. Ward and others report numbers of cases that recurred after ten years of apparent cure. We never know when these cases are cured, but certainly we are curing more of them than formerly.

I believe, like the previous speakers, that cancer of the body of the uterus, certainly in the early stages before fixation occurs and adjacent tissues are involved, is best treated by surgical removal. However, in late cancer of the body of the uterus where we have extension of the disease beyond the uterus and maybe fixation and it is impossible to move the uterus, then X-ray and radium will have to be used.

I think that further talks along this line will certainly help to educate the profession, and a certain number of people who read papers will be enlightened regarding the danger of cancer.

DR. S. S. MARCHBANKS (Chattanooga): This seems to be altogether a discussion from the surgeon's point of view. I thought I might add a little radiologically or from the radiologist's point of view.

As to the patients coming in early or late, I agree with Dr. Burch and Dr. Black that they are coming in earlier. There are plenty of advanced cases, of course, and there are as many of them as ever, but there are really more early cases coming in or rather more early cases coming in early. That is my experience.

With regard to operating in the early cases, and surgery as against radiation, most cancer of the cervix, of course, is squamous cell and these respond fairly readily to radiation, but the minority are adenocarcinoma, and it might be possible that they could be handled as well, sometimes better, by operation or both operation and radiation.

It is reported at the Memorial Hospital that they are getting about the same results in the way of cures of carcinoma of the fundus as by operation. I have always felt it was better to operate them and have always referred them to surgery, but there is a point for consideration and much depends upon the age and physical status of the patient.

DR. HOWARD KING (Nashville): Before this discussion closes there is one thing I think should be said about the use of radium. This paper embraces a wide field in the use of this agent, but the discussion has drifted largely to the treatment of carcinoma of the cervix.

For about eighteen years I have been using radium and I have been observing its use by my acquaintances in Tennessee and elsewhere, and I, for one, want to plead guilty to a great mistake that I think has been made by all of us and is still being made, and which I am striving now to correct. I believe none of us are using our radium in the proper way. By that I mean we are not using enough filtration, we are getting too much exposure with radium and causing too much reaction, and if we give sufficient doses to destroy malignancy we are getting too much slough, not only in the cervix, but everywhere. I feel that right now we are in the transition stage in the use of radium just as much as we are in X-ray therapy. In the last two or three years in X-ray therapy I feel the greatest step has been made in a great many years by the higher voltage therapy with better filtration and divided doses. The same thing is even more important in the use of radium. The capsules that we use, the filters, are not thick enough, they do not filter out enough shallow ray; therefore we must take steps to improve our technique and do less harm and a great deal more good. That can be done by interstitial radium needles and also by increasing the filtration of our capsules. I believe I would have to differ with the essayist that theoretically our results would be much better by divided doses than by single doses.

DR. JERE L. CROOK (closing): Mr. President, I attribute the liberal discussion of my paper to the importance of the subject rather than to anything of particular merit in the paper. I have brought forward some controversial points in the paper and I am sorry I did not make myself clear as to which of the schools of treatment of cancer of the cervix I am following personally. I stated in the paper, if Dr. Smith had listened a little more carefully, that personally I preferred the massive doses, but to be perfectly fair I quoted statistics both from Regaud and from the Cleveland Clinic so the audience could evaluate the two sets of statistics and choose accordingly. Personally I have given my entire thought and time and technic to the use of a large major dose. In trying to kill a rattlesnake, I want to give him a blow that will kill him the first crack; I would not want to tease him or tamper with him or stick him with a needle or pin. Still, I do feel, in justice to that great scientist in Paris and that great institute, that his figures should be presented alongside those of the Cleveland Clinic, which I selected as an outstanding clinic in America.

I did not stress technic regarding different organs of the body because the paper did not give me opportunity to do that within the time limit. I did stress particularly cancer of the cervix because of the fact that we are losing so many thousands of women unnecessarily from this horrible malady.

I believe that radium should be in the armamentarium of the surgeon and the surgeon should decide which cases should have the knife and which should have radium. In other words, the surgeon, being able to use both radium and the knife, will not have to base his operation upon the possession of either one or the other; he can use both, and he can and will then conscientiously use whichever method is best suited to the needs of the particular patient.

Dr. Burch stated that there was mortality in the use of radium. Of course, there is mortality in it, gentlemen, but what I stated in my paper was that in a particularly early case of carcinoma of the cervix, a well selected case which has been verified by careful diagnosis and laboratory examination, *radium* or the *knife* could be used and we could perhaps secure a cure in either case. But due to the fact that there is a certain amount of mortality in every major abdominal operation, and there is no mortality due to the use of radium in a carefully selected beginning carcinoma of the cervix without adnexal complications and without acute inflammatory processes in the abdomen, *that* is the type in which we have *no mortality* and *practically* no *morbidity* where *radium* is used by a man who knows what he is doing. Of course, I expect those who use it will be qualified in the use of this dangerous agent.

I want to pay a special tribute here (I did not do it in my paper but I feel it should be done, to the legitimate publicity, if I may so state, and the wonderful effects which are being secured by the cancer publication efforts in the magazine *Time*, in the *March of Time*, and in the wonderful series of pictures in *Life*. There are literally thousands of people who have looked at that *March of Time* reel and who have looked at the pictures in *Life* who would not be interested in a discussion by a competent surgeon. Undoubtedly the efforts of *Time* and its associated *March of Time* newsreels and the picture magazine *Life* have done a real and impressive public service in visualizing the ravages of cancer and the importance of its early recognition and efficient treatment by competent physicians in order to reduce its appalling and unnecessary mortality.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
Devoted to the Interests of the Medical Profession of Tennessee
Office of Publication, 508 Doctors Bldg., Nashville, Tenn.

Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 15, 1932.

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H. H. SHOULDERS, M.D., Editor and Secretary

APRIL, 1938

EDITORIAL

Medical Care and Viewpoint

Many different opinions are expressed from time to time on the subject of medical care. A study of these opinions and their source reveals many times that they are the expressions of a viewpoint and not expressions of a well-thought-out opinion at all.

The person who teaches medicine is often prone to reach the conclusion that medical education of the type he engages in holds the solution of all the problems of medical care.

The medical practitioner in a community who takes care of patients almost altogether in the home sees the question of medical care from an entirely different viewpoint.

The man who engages in some special work in medicine sees medical care from his angle.

The social service worker sees medicine from another angle. She sees a child who is suffering from malnutrition. Somehow or other she comes to the conclusion that if she had the power over doctors, the children, and some control over the laws of economics she could correct all social errors.

The patient who pays for the medical care he receives has one viewpoint toward medical care. The person who pays nothing for medical care has another viewpoint.

There are those with political ambitions who see in this state of confusion an opportunity for political advancement. Immediately he says, "There ought to be a law." Then he plans a law. As a result of the operation of a law, he hopes and promises that every one will have adequate food, adequate medical care, and fine surroundings in which to grow up. One never can dispute the objectives. There can be dispute about the methods by which the objectives are reached.

Some days ago we had the experience of reading two articles the same evening. One was written by a man who does not practice medicine at all. In fact, he is the teacher of a branch of medicine which is related very remotely to the practice of medicine. In his article he drew an attractive picture of the medical services received by the people of Russia under the communistic system.

The other article related to a tragedy that resulted from the Russian system. This story was to the effect that a doctor in Russia, who, of course, operated under the orders of a superior, was *commanded to poison another government official who was a patient.* He administered the poison and accomplished the death of his victim according to the orders received. According to the story, the doctor confessed to this crime. He was not executed, but was given a long prison sentence. It is supposed that the *extenuating circumstance* which warranted his escape from execution was the fact that he *did live up to the Russian system* of taking orders even though it involved him in committing a murder *by degrees.*

It is worth while for us to keep before us at all times the fact that "everything that is potent for good is also potent for evil."

It requires more judgment, wisdom, and poise to use large power than most, if any, human beings possess. To place in the hands of some government authority complete power over doctors and patients might be a good thing for some of the ills that exist. It might be remembered that such powers could bring ills of far greater proportion than those we now have. Thus we could fly from the ills we know to encounter those we have never known.

These are some of the facts concealed by those who plead for autocratic power in medicine. They never paint a complete picture; they paint the bright side only, and usually paint it much brighter than it is.

THE EDUCATION OF THE PUBLIC ON MEDICAL SUBJECTS

Much has been said and done from time to time with regard to educating the public on medical matters. There is some evidence that this education has resulted in good. There is also some evidence that the programs have not always resulted in the good desired.

In our opinion, progress in the cause of combating disease by prevention and by *cure* is in direct proportion to the knowledge and ability of doctors, and the faith of people in their doctors.

Progress in disease prevention has not been in proportion to efforts at public education on these subjects.

The medical profession and many lay groups have carried on campaigns designed to educate the people on the subject of cancer. There is very little evidence to support the contention that this education has accomplished much, if any, material good.

Much less educational effort has been put on the subject of typhoid fever, and this disease has almost disappeared.

This statement is not written to condemn efforts at education of the public on medical matters. It is written for the purpose of raising the question as to whether our efforts should not be directed along different lines.

If steps were taken to explain to the public that the educational requirements for a doctor today are much higher than the requirements of any other profession; that the state has concerned itself with regard to the qualifications of doctors and has, for many years, tested the ability of doctors by an examination before a license to practice is issued; that the medical profession also has spent much effort in the direction of making all doctors qualified and worthy of confidence, the end results might be much better all the way around.

If people were educated then to go to their physicians when anything abnormal occurs, and educated to follow the advice given by him with faith, the greatest possible good would result to patients and doctors.

Certainly it is of no value to a layman to read all the literature there is on the subject of cancer. At the conclusion of the reading he has more academic knowledge and almost nothing he can use except the advice, "Go see your doctor."

The patent medicine vendor does not educate the public concerning the contents of his dope nor concerning the nature of any illness for which it is recommended. All his statements about his medicine are designed to stimulate *faith in the drug*. A sad commentary it is that he succeeds in selling his products and in defeating all or most efforts to make him be even honest.

It is not unusual to hear of a millionaire patent medicine manufacturer. It is very unusual to see a rich doctor who earned it in practice.

The slogan "Take Wine of Cardui, the Woman's Tonic" did not educate any woman. Its testimonials do not educate. They inspire a faith and get results in the way of sales.

Medical care is and always has been vital to the well-being of mankind.

The medical profession has existed and goes on in spite of more different types of abuse than is applied to any other group of people.

Our services to the public today are so indispensable that even politicians and social agencies suggest legislation direct at the subjugation of both patients and doctors in order that credit for the good done may go to some *agency*.

The medical profession, as a whole, is worthy of faith. An educational campaign directed at establishing and increasing faith in the family physician and the medical profession as a whole we believe would accomplish great good.

DEATHS

Dr. J. W. Stevens, Nashville; University of Nashville, Medical Department, 1900; aged 58; died March 18.

NEWS NOTES AND COMMENTS

Dr. M. K. Moulder announces the opening of his office, 214 Doctors Building, Nashville. Practice limited to urology.

WOMAN'S AUXILIARY

President	Mrs. W. T. Black Memphis
President-elect	Mrs. H. E. Christenberry Knoxville
Press and Publicity	Mrs. B. F. Byrd Nashville

Knox County

"If the quins had been born in Knoxville during early days of Knox County Medical Society, the doctor who brought them into the world might have had enough corn to start a stock farm.

"One of the first things the five doctors who formed the medical society in 1871 did was to set fees for those who were unable to pay in cash. The fee for a baby was ten bushels of corn. For twins the fee was doubled to twenty bushels. There were no quins, but if there had been the doctor would have been paid in fifty bushels of corn."

The early history of the medical society was told to doctors' wives by Mrs. Jesse Hill at a meeting on March 8 of the Auxiliary to Knox County Medical Society at the home of Mrs. Edgar Grubb in Holston Hills.

"Pigs and stock or cotton materials were sometimes substituted for corn," Mrs. Hill mentioned, "the idea being to keep the patients from being on charity."

A patient who did not have the cash to pay for a routine visit of the doctor, who came calling in his buggy, paid one bushel of corn.

The society was given the name it still bears and it still abides by its original aims and ethics in organized medicine, Mrs. Hill said. The members were early interested in ethical practice.

As early as 1892 the Knox County Medical Society recognized women physicians and elected a woman to its membership. Dr. A. B. Tadlock was the first president of the society. Other charter members were Dr. Chalmers Deaderick, Dr. Swan, Dr. Barnett, and Dr. J. M. Ramsay.

At the close of her talk, Mrs. Hill read the list of past presidents and secretaries in a memorial service.

Rutherford County

The Woman's Auxiliary of the Stones River Academy of Medicine held its regular meeting Friday, February 18, in the form of a shower for the benefit of the nurses' home adjoining Rutherford Hospital.

The meeting was held at the home with Mrs. Sidney Smith, Mrs. A. J. Jamison, and Mrs. Sumpter Campbell as hostesses.

Many lovely gifts from the members included pictures, rugs, curtains, and bric-a-brac, which will be used to make the interior of the building more attractive.

Mrs. M. B. Murfree, program chairman, introduced Mrs. Smith, who read a well-outlined paper on "The American Society for Control of Cancer."

Mrs. Smith said that more progress in the understanding and the treatment of cancer had been made in the last thirty years than had been made during the rest of the history of mankind.

After the program, the hostesses served delicious refreshments of sandwiches, salad, and coffee.

Shelby County

Inaugurating a "doctors' day" celebration in conjunction with similar events throughout the United States, members of the Memphis Medical Auxiliary honored their husbands with a dinner dance Wednesday night, February 15, at 6:30 o'clock at the Medical Center on Dunlap. Mrs. W. T. Braun is president of the auxiliary.

Mrs. David H. James was general chairman for the party, assisted by Mrs. Edward Clay Mitchell, cochairman, and several committees. A reception was held preceding the dinner, and a hobby display of the doctors was on exhibit.

Mrs. O. W. Hyman and Mrs. Louis Boyd had charge of the entertainment program. A number of stunts and skits were presented with a take-off on a popular radio program by Mrs. James, Dr. Cleveland Simkins, and Dr. Abe Blecker.

A delightful feature of the evening's program was a vocal duet by Mrs. Hugh Smith and Mrs. Maude Quinn. A quartet composed of Dr. Carrol Turner, Dr. Wilson Searight, Dr. Phil Lewis, and Dr. J. R. Reinberger sang.

DAVIDSON COUNTY

The Auxiliary to Davidson County Medical Association met Friday, March 4, at the home of Mrs. Carl McMurray on Jones Avenue. Mrs. Oscar Nelson, president, presided over the business session. Dr. C. B. Tucker of the State Health Department made an address on "Clinical Control of Social Diseases."

It was announced that the annual birthday party would be given in March and that the husbands of the members would be the honor guests. Luncheon was served at the close of the meeting.

MEDICAL SOCIETIES

Anderson County:

The Anderson County Medical Society met March 7 in Clinton. The following members were present: Drs. J. S. Hall, J. M. Cox, Thos. Jennings, A. J. Butler, and Horton G. DuBard.

We enjoyed the presence of Dr. J. A. McCullough and Dr. J. A. LeQuire, of Maryville, who discussed with us plans for the East Tennessee Medical Association meeting which is to be held in Clinton on October 4, 1938.

A paper on "Acute Otitis Media" was reviewed from a current medical journal by Dr. H. G. DuBard and discussed by members. A paper on "Diseases of the Mediastinum" was presented by Dr. J. M. Cox, followed by a discussion from members present.

(Signed)

HORTON G. DUBARD, M.D., *Secretary.*

Davidson County:

March 15—"Renal Tuberculosis," by Dr. Henry Douglass. Discussion by Dr. E. H. Barksdale.

Case Report—"Acromegaly: A Ten-Year Observation of Patient Responding Successfully to X-ray Treatment," by Dr. Albert Weinstein. Discussed by Dr. T. D. McKinney.

March 22—"The Principles and Proposals Set Forth by the Self-Appointed Committee of Physicians," by Dr. Hugh Morgan. Discussed by Dr. H. H. Shoulders.

March 29—Dr. Henry F. Vaughan, Commissioner of Health, City of Detroit, was guest of the society.

April 5—"Viruses and Virus Diseases of Man," by Dr. E. W. Goodpasture. Discussed by G. J. Buddingh.

Dyer, Lake, and Crockett Counties:

The Dyer, Lake, and Crockett Counties Medical Society met in regular monthly session Wednesday, April 6.

Scientific program:

"Industrial Surgery," Dr. R. F. Mason, Memphis.

"Personal Observations of Caesarean Sections," Dr. George R. McSwain, Paris.

"The Significance of Albumen in the Urine," Dr. George R. Livermore, Memphis.

Thirty-five attending.

C. L. DENTON, *Secretary.*

Fayette-Hardeman Counties:

February 25—"Middle Ear Infections," by Dr. S. S. Evans, Memphis.

"Pernicious Anemia," by Dr. Alfred Goltman, Memphis.

March 25—"Common Anal Conditions," by Dr. B. F. Hardin, Memphis.

"Chronic Amebiasis," by Dr. H. F. Crawford, Memphis.

Hardin, Lawrence, Lewis, Perry, and Wayne Counties:

The Five-County Medical Society met in Waynesboro, Tuesday, March 29.

The following papers were read:

"Hemorrhage in the Latter Months of Pregnancy," by Dr. Swan Burrus, Jackson.

(Continued on page 158)

LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

President—Dr. Geo. C. Williamson, Columbia.
Vice-President for West Tennessee—Dr. F. K. West, Rossville.
Vice-President for Middle Tennessee—Dr. Jack Witherspoon, Nashville.
Vice-President for East Tennessee—Dr. Andrew Smith, Knoxville.
Secretary-Editor—Dr. H. H. Shoulders.
Assistant Secretary-Editor—Dr. W. M. Hardy.

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Dr. A. F. Cooper, Goodwyn Institute Building, Memphis.
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Dr. W. L. Williamson, 915 Madison Ave., Memphis.

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Eighth District—Dr. J. R. Thompson, Jackson.
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Tenth District—Dr. W. B. Burns, Memphis.
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Delegates to the American Medical Association—
- Dr. E. G. Wood, Knoxville; East Tennessee.
- Dr. H. H. Shoulders, Nashville; Middle Tennessee.
- Dr. H. B. Everett, Memphis; West Tennessee.

Alternates—
- Dr. E. T. Newell, Chattanooga; East Tennessee.
- Dr. J. O. Manier, Nashville; Middle Tennessee.
- Dr. E. C. Ellett, Memphis; West Tennessee.

OFFICERS OF COUNTY MEDICAL SOCIETIES

County	President	Vice President	Secretary
Anderson	O. E. Ballou, Clinton	Geo. W. Kelly, Clinton	J. S. Hall, Clinton
Bedford	James N. Burch, Shelbyville	Price Womack, Shelbyville	W. H. Avery, Shelbyville
Blount	G. D. LeQuire, Maryville	W. C. Crowder, Maryville	J. Frank Manning, Maryville
Bradley	D. N. Arnold, Cleveland	C. H. Taylor, Cleveland	Madison S. Trewhitt, Cleveland
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*Cumberland	E. W. Mitchell Crossville		V. L. Lewis, Crossville
Davidson	W. B. Anderson, Nashville	M .S. Lewis Nashviiie	J. P. Gilbert, Nashville
Dickson	L. F. Loggins, Charlotte		R. P. Beasley, Dickson
Dyer, Lake, Crockett	J. O. McKinney, Friendship	J. E. Frazier, Newburn (Dyer) J. P. Moon, Tiptonville (Lake) W. H. Stallings, Friendship (Crockett)	C. L. Denton, Dyersburg
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*Fentress	C. A. Collins, Wilder	A. H. Crouch, Forbus	J. P. Sloan, Jamestown
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Gibson	John Jackson, Dyer	Robert Morris, Medina	E. P. Bowerman, Trenton
Giles	A. W. Deane, Pulaski	G. C. Grimes, Aspen Hill	J. U. Speer, Pulaski
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Grundy	O. H. Clements, Palmer	Wm. A. Brewer, Monteagle U. B. Bowden, Pelham	T. F. Taylor, Monteagle
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Hamilton	A. M. Patterson, Chattanooga	S. H. Long, Chattanooga	J. Marsh Frere, Chattanooga
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Haywood	R. T. Keeton, Brownsville	G. G. Mulherin, Brownsville	Roy M. Lanier, Brownsville
Henry	A. F. Paschall, Puryear	Elroy Scruggs, Paris	R. Graham Fish, Paris
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Roane	O. H. Coleman, Kingston	F. A. Neergaard, Harriman	J. C. Fly, Kingston
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White	E. T. Tubb, Sparta		A. F. Richards, Sparta
Williamson	W. F. Roth, Jr., Franklin	B. T. Nolen, Franklin	K. S. Howlett, Franklin
Wilson	J. S. Campbell, Lebanon	R. N. Buchanan, Jr., Lebanon	R. B. Gaston, Lebanon

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* 1937 Officers.

COMMITTEES

The following is a list of the standing committees of the Tennessee State Medical Association provided for in the constitution and by-laws and appointed by the proper authority, together with some special committees appointed under the authority of a resolution by the House of Delegates.

Some of the committees are appointed for a definite period. In such instances the appointment of the committeeman expires with the meeting of the House of Delegates in the year stated opposite his name.

COMMITTEE ON SCIENTIFIC WORK

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Dr. A. F. Cooper, Memphis.
Dr. Frank Harris, Chattanooga.
Dr. A. H. Lancaster, Knoxville.

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Dr. E. G. Wood, Knoxville.
Dr. H. B. Everett, Memphis.
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Dr. E. W. Cocke, Memphis (1941).
Dr. Battle Malone, Memphis (1940).
Dr. Tom Barry, Knoxville (1938).
Dr. T. R. Ray, Shelbyville (1942).

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Dr. Tom Mitchell, Memphis (1938).
Dr. Tom R. Barry, Knoxville (1942).

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"Hunting the Needle in the Haystack," by Dr. J. W. Danley, Lawrenceburg.

"The Surgical Significance of Endometriosis," by Dr. R. B. White, Jackson.

Knox County:

March 15—"Diseases of the Optic Nerve," by Dr. John Montgomery. Discussion led by Drs. Leach, Potter, Cunningham, and R. B. Wood.

March 22—"Organization of Local Venereal Disease Clinic," by Dr. John R. Smoot. Discussion by Drs. Pope, Andrew Smith, and Hufstedler.

March 29—"Carcinoma of the Breast," by Dr. Dewey Peters. Discussed by Drs. Acuff, Monger, and Hugh Reaves.

April 5—"Pollen Allergy," by Dr. Glen Grubb. Discussed by Drs. Long, Luttrell, and Dan Thomas.

Unicoi County:

Two meetings of the Unicoi County Medical Society were held in the past month. At the first of these Dr. H. L. Monroe presented a paper on "Undernutrition in Children." Discussion was led by Drs. Moody, Harvey, and Wright.

At the second meeting Dr. John J. Wright presented a paper on "Intestinal Parasites and Their Treatment." Discussion was led by Dr. R. E. Stack.

Washington County:

On April 14, Dr. Walter E. Dandy, Baltimore, Maryland, gave an address on "Diagnosis and Treatment of Lesions of the Cranial Nerves."

The following papers are scheduled to be read on May 5:

"Pathological Conditions of the Thyroid Glands," by Dr. Lee K. Gibson. To be discussed by Drs. Brading and Creech.

"Radium Treatment of Skin Lesions," by Dr. J. G. Moss. Discussion by Drs. Gambill and Walter Hankins.

OTHER MEDICAL SOCIETIES

The West Tennessee Medical Society will meet in Jackson on May 26.

The Middle Tennessee Medical Society will meet in Goodlettsville on May 19 and 20.

The East Tennessee Medical Society will meet in Clinton on October 4.

The Five-County Medical Society, composed of Putnam, Cumberland, Jackson, Overton, and White Counties, met March 17 at Livingston.

The next meeting will be held May 19 at 7:00 P.M. at the Shamrock Hotel, Gainesboro.

Vanderbilt Medical Society, March 4, 1938

1. Case Report: "A Case of Disseminated Actinomycosis," Dr. John J. Clancey.

A nineteen-year-old negro entered the hospital with hemiplegia, multiple draining sinuses, and evidence of localized pulmonary suppuration. He ran a rapidly downhill course. Characteristic "sulfur granules" and ray fungus were recovered from sinus tracts. Post-mortem examination showed multiple abscesses scattered through liver, lungs, and brain. Total duration of illness, eight months.

Case Report: "A Case of Actinomycosis Meningitis with Recovery," Dr. Thomas E. Wyatt.

A fourteen-year-old schoolboy, who had had focal convulsions involving right hand and arm since age nine. A craniotomy was performed and left motor cortex excised; it was badly scarred and convulsions appeared due to a birth injury. The skull flap was closed, and drain inserted in posterior burr hole. Sutures and drain were removed on first postoperative day. On fifth postoperative day there was a little drainage of spinal fluid through site of old drain. On twelfth postoperative day boy developed typical meningitis. On lumbar puncture colorless gelatinous fluid was obtained on two occasions. Xanthochromic fluid was obtained on cisterna puncture. All three fluids were cultured, and positive culture was obtained of what appeared to be an organism belonging to the actinomyces group. The organism resembled in its early development a streptococcus and then developed branching forms which in older cultures appeared as a diphtheroid organism. The child recovered from the meningitis following spontaneous drainage of cerebrospinal fluid at drainage site on sixteenth postoperative day.

The cases were discussed by Drs. Hugh J. Morgan and Ernest W. Goodpasture.

2. "Reaction of Phagocytic Cells of Connective Tissue to Extracts Prepared from Brains," Dr. Edna H. Tompkins.

Lipides prepared from beef brains were fractionated into three groups by a method dependent upon relative solubilities. The various products obtained by this method were injected subcutaneously in guinea pigs as weak saline emulsions. Supravital studies were made from scrapings of the injected areas three to five days later.

It was found that each specific chemical group gave a specific biologic reaction. The ether-soluble group, largely lecithin and kephalin, gave rise to a production of clasmatocytes of a size and activity comparable to that usual for normal tissue clasmatocytes. The pyridine insoluble fraction, largely sphingomyelin, gave rise to a production of clasmatocytes of exceptionally great size and filled with unusually large deposits of supravital dye. The pyridine soluble fractions, largely cerebrosides, gave rise to a marked infiltration of polymorphonuclear cells with only an occasional clasmatocyte.

The paper was discussed by Dr. C. S. Robinson.

3. "A Method of Quantitation of Inoculum in Experimental Syphilis and Some of Its Applications," Drs. George P. Vryonis and Hugh J. Morgan.

A method for counting the number of *Treponema pallidum* in a measured amount of fluid was described. It was pointed out that heretofore there was no accurate means of determining the size of the inoculum in experimental syphilis. It was shown that in one group of experiments the minimum infecting dose was 30,000 *Treponema pallidum.* It was demonstrated that the size of the inoculum (the number of organisms injected) materially influences the duration of the incubation period and the severity of the clinical manifestations of the disease in the animal. It was pointed out that the method lends itself to immediate application in several important problems in experimental syphilis.

The paper was discussed by Dr. Ernest W. Goodpasture.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Building, Nashville

Avertin: Its Conservative Employment with Satisfactory Results: Report of 500 Cases. Bernheim, Light, and Livingstone. Current Researches in Anesthesia and Analgesia, January-February, 1938.

In a summary of 500 cases on avertin administration it was found to be an ideal basal anesthetic either used alone in certain cases or supplemented by inhalation anesthesia when a more relaxed condition is desired. In suitable doses it has been found that it is eminently satisfactory. Difficulties have been experienced when very large doses were used to produce surgical anesthesia resulting in depression of respiration and circulation.

Doses should not exceed 100 milligrams per kilogram. Death has occurred by respiratory depression. Occasional fall in blood pressure can be corrected by ephedrine. It produces perfect induction by a nonpainful rectal administration, making an excellent basal anesthetic permitting large percentages of oxygen to be used. It is also advantageous in treatment for tetanus, chorea, and convulsions. Lack of postoperative complications were noted.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

The Treatment of Early Carcinoma of the Lip, with Special Reference to the Use of Low Kilovoltage X-rays. John C. Belisario. M. J. Australia, 1: 91, January 16, 1937.

The author regards roentgen irradiation in the treatment of early carcinoma of the lip as the method of choice. He does not deem it advisable to remove nonpalpable lymph glands and favors watchful waiting. In his series of cases there was subsequent glandular involvement in less than one per cent, and in none of them was there local recurrence. The following technic was employed: The lip is first everted, and then both sides of the lesion are irradiated, 700 units being used on each side. This treatment was used in seventy-two cases, and subsequent glandular involvement was noted in only one case. The author recommends a peak voltage of 110 kilovolts, six milliamperes, a two-millimeter aluminum filter, and a skin target distance of ten inches (twenty-five centimeters). He favors a two-millimeter over a one-millimeter aluminum filter as the local reaction and the temporary inconveniences are reduced. The technic of shielding is described. Results in fifty-eight cases in which treatment with either radium plaques or interstitial radiation was employed generally were in no way inferior to those obtained by roentgen irradiation. The interstitial irradiation proved much better than surface application.

The author favors roentgen over radium therapy for the following reasons: (1) shortness of time required for actual treatment (thirteen and one-half minutes for actual delivery of a dose); (2) absence of all pain; (3) elimination of the discomfort caused by the presence of implanted radium needles and their removal; (4) elimination of the necessity for preliminary attention to dental sepsis; and (5) a more localized, shorter, and less distressing reaction than that following the implantation of radium needles.

OBSTETRICS AND GYNECOLOGY

By Hamilton V. Gayden, M.D.
Suite 234 Doctors Building, Nashville

Diabetic or Mycotic Vulvovaginitis. H. Close Hesseltine and L. K. Campbell. American Journal of Obstetrics and Gynecology, 35: 272-282, February, 1938.

The authors have been interested in the subject of vaginitis for many years and are convinced that the fungus is the etiologic factor in patients with "diabetic vulvovaginitis." One hundred and eleven diabetic females have been studied, fifty-eight with vulvitis or pruritis, fifty-three without vulvitis or pruritis. Detail tables are presented. "The incidence of fungi in diabetes mellitus patients with vulvitis and the similarity of the clinical appearance of mycotic vulvitis and of diabetic vulvitis justifies the statement that diabetic vulvovaginitis is an infection, usually a mycosis, and rarely if ever an irritation from the products of urine."

Glucose available in the urine or tissues favors the development of vulval mycosis. Fungicidal therapy will cure "diabetic vulvitis." When a mycotic vulvitis is found in a nonpregnant patient, one should exclude the possibility of diabetes mellitus.

The Relation of Labor to Intracranial Injury in the Premature Infant. W. C. Studdiford and H. P. Salter. American Journal of Obstetrics and Gynecology, 35: 215-228, February, 1938.

A definite interest in recent years has been shown in injuries sustained by the fetus during delivery, however, this communication is confined to the premature infant. At autopsy dural lacerations and subdural hemorrhage with microscopic hemorrhage in the brain itself was most commonly found in the term infant at Bellevue Hospital. The lesions most characteristic in the premature were found to consist of diffuse subarachnoid hemorrhage, gross cerebral hemorrhage, and in particular subventricular hematomas. This division is not sharp.

Thirty-eight cases are presented in charts carefully prepared. Granting that we are dealing with a fetus with inadequate connective tissue and vascular development, it is of interest to speculate on the point during parturition at which these injuries occur. Compression, first by the dilating cervix in the first stage and second by the opposition offered by the perineal structures in the second stage, satisfactorily explains the dural lacerations. One would expect that premature rupture of the membrane would be an additional factor since when intact it tends to equalize the intrauterine forces. The area of the fetal head exposed in the dilating cervix and vaginal introitus becomes an area of low pressure. The voluntary efforts of the patient in the second stage increase the pressure in this area and the blood vessels distend. If distention is pronounced, these vessels burst. Distention reflected backward along the dural sinuses through the great cerebral vein accounts for the rupture of the weak tributary veins beneath the floor of the lateral ventricles.

Prevention of these injuries involves two considerations. First, avoid unnecessary induction of labor. Second, eliminate excessive compression in the second stage. "Many cases of premature labor are initiated by the rupture of the membranes." The authors believe that if the cervix is closed, unretracted, induction will produce a prolonged labor, whereas, if the cervix is soft, retracted, and slightly dilated, she will go into labor promptly. "The induction of premature labor in the presence of resistant soft parts in order to bring a small fetus through a borderline pelvis is to be condemned. An induced labor is frequently prolonged, and the premature infant often sustains injuries during the process. A cephalic application of forceps is of even greater importance than in the term infant."

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

The Use of Concentrated Epinephrin Preparations in Glaucoma, Iritis, and Related Conditions. M. Wiener and B. Y. Alvis. Archives of Ophthalmology, March, 1938.

Wiener and Alvis discuss the use of different preparations of epinephrin and give the following conclusions:

"1. Concentrated epinephrin is a powerful mydriatic capable of lowering ocular tension, or of producing an acute rise of tension, of causing severe pain and occasionally unpleasant general symptoms; hence, the first use should be made

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ROENTGENOLOGY

By Franklin B. Bogart, M.D.
Medical Arts Building, Chattanooga

Radiation Therapy in Excessive Uterine Bleeding from Causes Other Than Cancer, Report on 327 Cases. Robert H. Lafferty, M.D., and C. C. Phillips, M.D., Charlotte, North Carolina. Radiology, Vol. 29, No. 3, p. 362.

Radiation is the method of choice in menorrhagia. Contraindications are rapidly growing large fibroids, fibroids causing pressure symptoms which demand quick relief, pedunculated tumors, uterine polypi, tumors which can be removed leaving the uterus intact, tumors which have undergone cystic degeneration, ovarian cysts, extreme mental depression, patients in which partial hysterectomy has been done, and bleeding continues from the residue of uterus. Women in childbearing period should not receive radiation unless all other treatment short of hysterectomy has failed.

In the author's experience, no diminution in the sexual power of the patients has occurred.

When marked menopausal symptoms occur, the intramuscular injection of one cubic centimeter of estrogen every other day for six doses usually gives relief.

Most cases can be equally well handled with X-ray or radium. The authors usually prefer X-ray, because the patient does not require hospitalization, and the total dose can be conveniently divided into several treatments and administered over a considerable period of time with less discomfort to the patient.

In cases in whom it is necessary to check the bleeding quickly radium is preferred.

One and sometimes two menstrual periods will occur during the time required to produce menopause, and sometimes the first period will be more profuse than has been previously noted. The average time required to establish the menopause is six weeks.

Out of the 327 cases treated, 313 (95.7 per cent) were cured. In eight of the fourteen uncured cases, there were definite contraindications which should have prevented radiation therapy being tried. If these eight had been eliminated, cures would have been obtained in 98.1 per cent of cases.

Fibroid tumor was found in fourteen per cent of the cases. The presence of tumor does not influence the results, because after menopause is established, the tumor atrophies to such an extent as to cause no discomfort or inconvenience.

The general health was almost invariably improved following treatment. In no case has cancer developed.

TECHNIC

In those cases treated with X-ray, we used from 1,200 to 1,800 r, the average amount of treatment being 1,500 r. This variation depends upon the age of the patient and also the thickness of the parts. This treatment is divided into doses of 300 r given once each week, alternating one anterior and one posterior field.

We have used in these cases voltage from 120 kilovolts up to 220 kilovolts and filter from four millimeters of aluminum up to two millimeters of copper. At the present time we use 220 kilovolts, twenty milliamperes, one millimeter copper filter, fifty centimeters distance.

In those cases which were treated with radium, we used from 800 to 1,200 milligram hours, the average amount being 1,000 milligram hours. We use radium with one millimeter platinum and one millimeter rubber filter.

CONCLUSIONS

From a survey of the literature on this subject and from the management and study of this series of cases we reach the following conclusions:

(1) That ninety-eight per cent of these patients who have no contraindications to this method of treatment can be cured by radiation.

(2) That this is the most satisfactory method available of handling these cases.

(3) That women should not be allowed to suffer discomfort and worse for months or years while establishing the menopause, when by this method of treatment it can be established in from three to six weeks.

(4) That there is no permanent bad effect on the sex life resulting from the treatment.

(5) That the treatment may help to prevent cancer.

SURGERY—GENERAL AND ABDOMINAL

By Battle Malone, II, M.D.
1400 Monroe Avenue, Memphis

Saphenous Vein Ligation. P. J. Sarma, M.D. Surgical Clinics of North America, February, 1938.

The author is treating an increasing number of cases of varicose veins by combined ligation and injection since incompetent saphenous valves led to prompt recanalization following injections alone. The condition of the valve is determined by the Trendelenberg test. If the test is negative, only the superficial valves are incompetent. In this case ligation is an unnecessary adjunct to injection. A positive test indicates incompetence of the saphenous valve and regurgitation of blood into the saphenous from the femoral vein. Here ligation is indicated. A double positive test indicates valvular insufficiency of the intercommunicating veins as well as the saphenous valves. Multiple ligations and incisions combined with injections are necessary in this type.

Contraindications of ligation are local or general infection, systemic degenerative diseases, senility, arterial disease, severely infected ulcer and thromboangitis. The patency of the deep circulation is always ascertained before injection or ligation. Ligation should not be done during pregnancy.

The saphenofemoral junction is the location of choice for ligation in most cases. Tributary veins in this region such as the superficial epigastric, superficial circumflex iliac, or external pudendal are also ligated. The operation is done under anesthesia. A transverse incision 2.5 inches long is made one inch below Poupart's ligament over the saphenous vein which lies just outside the deep fascia. The vein is doubly ligated above and below the section without previously clamping it. Into the distal portion of the vein three cubic centimeters of sodium morrhuate is injected. The branches and accessory veins are ligated and cut. The wound is closed with three or four interrupted sutures. The patient is allowed to walk and leave the hospital as soon as he is off the operating table. This is thought to be a safeguard against thrombosis and emboli. Weekly injection of the variocosities is begun when the stitches are removed. Careful observation and follow-up are advised.

When it is necessary to ligate both saphenous veins, it is done at separate times. In very obese patients it is sometimes better to ligate below the saphenous bulb where the vein is more accessible. Occasionally it is necessary to ligate the vein in the lower third of the thigh because of a ruptured dilated vein in that region.

End results in 1,000 patients were good in 958 cases. Twenty-four patients with a double positive Trendelenberg were considered failures.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.
By G. A. Williamson, Jr., M.D
Medical Building, Knoxville

Urinary Tract Disturbances Referable to Cervicitis. O. A. Nelson. Journal of Urology, March, 1938.

This paper is based on a study of eighty-seven cases of cervicitis with associated urinary tract disturbances. Those who had diseases or conditions other than cervicitis to which the urinary disturbance could be attributed were excluded.

All of the eighty-seven cases had frequency of urination on reporting for examination, seventy-two had low backache, sixty-eight gave a history of vaginal discharge. In all cases urethroscopic examination showed a variable degree of granular urethritis. Trigonitis was present in thirty-three. Catheterized urine showed no pus or bacteria in fifty-eight, a variable degree of pyogenic infection was present in twenty-nine. In nineteen the upper urinary tract was infected, and fourteen had pyelactasis and caliectasis with ureteral dilatation. Three had renal calculi.

That the cervicitis was the cause of the urinary tract disturbance in many of these cases was a difficult diagnosis to make, and could be done in some only by the process of elimination.

Forty-three of the patients had had cervical cauterization without relief of symptoms before coming for genitourinary examination. The Sturmdorf type of gynoplasty was employed on thirty-six of these patients after genitourinary examination. Twenty-eight of these were relieved, while the other eight required further treatment of the urinary tract.

Patients who have pelvic inflammation as well as cervicitis usually require hysterectomies, etc., in order to obtain results.

The writer concludes that patients with diseases of the urinary tract associated with cervicitis are not relieved by cervical cauterization, but are cured by the Sturmdorf operation and genitourinary treatment, except with pelvic inflammation which requires major pelvic operations for permanent relief.

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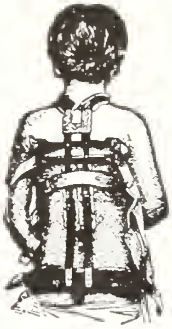

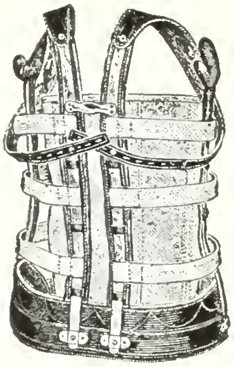

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OFFICE OF PUBLICATION, 508 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXXI MAY, 1938 No. 5

PRESIDENT'S ADDRESS—SURGERY OF THE CIVIL WAR*

GEORGE C. WILLIAMSON, M.D., Columbia

SERVICE SOONER or later must be rewarded; this is the Divine plan. Truth may be returned to dust with the body that sustained it, but in time it rises to vindicate the courageous heart that defended it. War is always attended with grim circumstances demanding the utmost bravery, for which no decorations could ever repay. Memorial buildings and highways, battlefields covered with monuments, reunions which rehearse the valorous deeds of those who fought, all prove the dramatic scope of the Civil War period in the minds of the American people. In this conflict, state against state, neighbor against neighbor, and brother against brother were pitted by incredible fealty to conviction. If the Southern people erred grievously in their decision, grievously they answered for it. For four long years they fought in an unequal and inherently hopeless struggle, enduring afterward what no civilized people had suffered since Louis XIV ravaged the Palatinate.

Little was written then of the new South which somehow rose miraculously from the ashes of the old and courageously accepted its share in the national development; but in recent years more and more historical emphasis from an unbiased standpoint is being presented through the press and on the screen. For a decade now, two generations removed from the conflict, attention has been focused upon the past of our country, as well as its present development. Pilgrimages to the stately residences of Charleston, the patio homes of New Orleans, the plantation mansions of Natchez, and the tidewater region of Virginia denote a universal acknowledgment of the pre-Civil War achievements of the section invaded by war. A definite revival of the dramatic aspects of the war and the struggle of reconstruction is centered in outstanding and successful literary productions of the past few years. "Gone with the Wind" gave it its strongest impetus, followed by a number of distinguished books now popular with the reading public, as "The Tragic Era," "Action at Aquila," "The Yearling," biographies of Abraham Lincoln, Generals Grant, Sherman, Lee, and others immortalized in Civil War annals. Historians are anxious to tell the story with a more understanding pen. The Southern Literary Festival (inaugurated at Blue Mountain College, Mississippi) and the Chapel Hill, North Carolina, group represent a trend in creative writing among college students. Social and economic changes are pressing the South into the same paths that have standardized American life, especially during the present political administration, and are giving it again an integral and important part in the direction of national affairs.

Therefore, with this sweeping tide of renewed interest in the Civil War period, it seems most fitting that members of our noble profession uncover the valorous role played by the surgeons of this conflict, not only to pay them homage, but also to relate their efforts to surgery of today. From the period immediately preceding the Civil War up until the present, more progress has been made in scientific medicine than in all the previous centuries of the life of civilized man. The mass of medical and surgical experience incurred on the battlefield during those infant days of the "Queen of Arts" yields an important chapter in the history of American surgery. In introducing his subject, the essayist hopes that the long-dormant interest in surgical deeds of merit performed by these military surgeons will be awakened, and that men more competent than he will bestow upon these heroes honor now too long delayed. If adequate biographies had been written, diaries and papers collected, and records of their work made more available for investigation, we should have no occasion to complain that their contributions have gone unrecognized. Little was published to vindicate the most advanced thought of the time. Only a few men, like Gross and Keen, contributed illuminative articles to medical journals after the war.

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*Presidential address read before the Tennessee State Medical Association, Nashville, April 12, 13, 14, 1938.

We in Tennessee can approach the subject with a peculiar interest, for the events of at least two battles fought on this soil are attended with special significance. After the Confederate victory the first day of the Battle of Shiloh (April 6 and 7, 1862) General Albert Sidney Johnston received a bullet wound in the popliteal space, and "died without pain" before he was aware of his great loss of blood. One man dropped when a bullet severed the carotid artery. It is also worthy of note that Shiloh was the last battle to be fought without breastworks, the losses on both sides being so heavy that three days elapsed before many of the wounded were given surgical attention. The percentage of head injuries exceeded the record from any subsequent battle. Also because of marked disparity on the part of philanthropic agencies which aided the wounded after the battle, the medical departments of both sides ordered that thereafter the wounded should be ministered to alike, irrespective of uniform. From this agreement date the beginnings of the American Red Cross.

At the Battle of Chickamauga we are told this story, which no doubt influenced Dr. John A. Wyeth to become later a great surgeon. Like Shiloh, Chickamauga was bloody, a soldier's battle, fought with most headlong courage and admirable persistence on both sides, and with a minimum of direction from the high command. This time, however, the soldiers were behind breastworks of logs and earth. The night before the battle, September 16, 1863, it was imperative for the Confederates to get a message through to a large division beyond the enemy's encampment. The general sent a whispered request for a volunteer down the long, silently marching lines. From far down the ranks a mere lad hastened to the front. His request to remain in his uniform being granted, the boy agreed to set out at once on the hazardous undertaking equipped only with a fast horse and his six-shooter. Lying flat against his horse and pressing his spurs, young Wyeth passed the pickets safely and delivered the message. He refused the furlough the general offered him and remained through the battle. So deep were his impressions of the stoicism of the soldiers who underwent amputations and emergency treatment of wounds without a groan, in later years he became a surgeon and writer of international reputation, giving us the bloodless amputation of the hip, and teaching us to ligate the carotid artery. Before the Civil War amputations of the hip carried a ninety-three per cent mortality. Wyeth's operation dropped it to fifty per cent, and today only seven per cent are fatal.

Let us consider for a moment the estate of military surgery when the Civil War began. A half century before the Napoleonic wars had been blessed with Pare's greatest contribution—that of treating war wounds by letting them alone or spreading an ointment on them rather than using boiling oil. He had also suggested the possibility that flies might transmit disease.

In 1836, in the fight for Texas independence, General Sam Houston had a leg shattered at San Jacinto, but could not be given medical aid until he arrived by boat in New Orleans several days later. Then he was given the radical treatment of having twenty pieces of bone removed from his leg. In the Mexican War of 1846 about 100,000 troops were sent down without stretchers or hospital tents, hospital equipment, cooking utensils, and marched for months in one uniform. It is no wonder that 10,951 died of disease and 13,285 were discharged "disabled," while only 1,549 were killed or died of wounds. In the Crimean War of 1853, Florence Nightingale founded the nursing profession, but the first training school for nurses was not to be established in the United States until 1873, eight years after the war. In the Crimean less than 3,000 English were killed, against 17,000 who died of disease. The ambulance was first used in the Franco-Prussian War in 1859. But the great boon to military surgery, as well as all surgery at that time, was anesthesia. Guthrie, of Sacketts Harbor, New York, and Soubieran, of Paris, had described chloroform the same year (1831), Crawford W. Long had begun the use of ether in 1842, and W. T. G. Morton in 1846.

Instruments consisted chiefly of the silver probe, the hook used in tying threads, the needle, silk thread, and knives. The hypodermic syringe, devised in 1845 by F. Rynd, was a rare and treasured aid to the army surgeon. There were no thermometers, no retractors, no hemostats, no antiseptic sutures, no X-rays to help locate bullets or other foreign bodies, no rubber gloves, no Red Cross, no trained nurses, no motor ambulances, no bacteriology or antisepsis, no first aid packets for the soldiers, no telephones or electricity, no flashlights, no tetanus antitoxin, no typhoid vaccine.

When the Civil War broke out, the regular army numbered but 15,000 officers and men, poorly trained, poorly supplied, and badly scattered. Seniority promotion and the lack of retirement for age or disability kept the upper ranks full of old men who all their lives had been engaged in small things. The medical department was no exception. The medical officers had had neither experience nor training for anything larger than post practice and peacetime administration. The surgeon general had only three clerks in his office. During the entire war, however, 2,109 regimental surgeons, 3,882 regiment assistant surgeons, 5,532 acting assistant surgeons were mustered into service.

First aid was a natural exigency, and hemorrhage was the first consideration in first aid treatment. Pressure was employed with bandages or perhaps by a pebble placed over the bleeding vessel. (Marked swelling was a frequent circumstance of too-tight bandaging.) Styptic powders also played a great role in staunching the flow of blood. Persulphate of iron in powder or solution was placed in every knapsack and pannier of war found at every hospital. Other agents—argentic nitrate, gallic and tannic acids, alum, turpentine—were made use of with not altogether unfavorable results. Even wounds of axillary artery were successfully packed with lint saturated with strong persulphate. Ligations were done 2,235 times, 1,380 of which failed. Fence palings, flat boards, and pine boughs served as splints. In the summertime the rapid infestation of wounds with maggots presented an annoying problem. Coal oil and turpentine, powdered calomel, and infusion of tobacco were used for their prevention. Food and water, however, were as often a first aid responsibility of the field surgeon as wound treatment. Water frequently required boiling due to pollutions which caused severe diarrheas; fresh vegetables were absent from the regular ration for months on a stretch. Purging too often predisposed to paresis of the bowel and obstruction.

Transportation of the wounded was slow and tedious. The litter, the packsaddle, the mule litter, the spring wagon, two-wheeled and four-wheeled ambulances carried the wounded from the field of battle. Boats and the railway train were a means also, the idea of the Pullman car later originating from this practice. Shock, rough roads, lack of proper splinting, thirst, and hunger lowered resistance to surgery and increased mortality.

The most deplorable fact associated with the war is that Lister's antiseptic surgery had not arrived in time to make the hospital a haven of security. Surgery was viewed with horror by every person confronted with the possibility of an operation. Forty-five per cent of amputations resulted fatally. Hospitals smelled to high heaven with the pus, the decay, and the inflammation of infected wounds. Indeed the idea was general that the production of large amounts of pus in a wound was a highly desirable effect. The term "laudable pus" occurs frequently in the discussions of surgeons writing their reports. C. B. Johnson, a steward at Memphis Hospital (1862-63) observed: "Practically every wound suppurated and 'laudable pus' was always looked for, and in all instances welcomed. . . . Wounds of larger joint cavities were in all instances serious and oftener than otherwise ended in death. Under these circumstances amputations and radical sacrifices of parts were frequently resorted to to obviate fatalities." Heroic measures were taken to heal wounds by first intention, but in his unawareness of the true cause of infection, the surgeon combated a more powerful slayer than the soft lead bullet or hand grenade. So tragic was the incidence of infection, hospital gangrene, erysipelas, and so great was the risk of sepsis after every operation, the wounded soldier actually was exposed to more chances of death than when he faced the enemy's attack.

Cold-water dressings were employed in most instances. Gross advised using them "as soon as inflammation arises, not before." Jewett believed after the suppurative process was fully established, the abundant use of cold wet dressings was injurious. He also used tincture of muriate of iron, but gave his preference in the field of perchloride of iron. Eating ulcer cases were anesthetized, as a rule, and the wounds sterilized with pure nitric acid, bromine, or permanganate. If hemorrhage was present, the actual cautery was employed. Surgeon Chamblis contends that from 3,000 cases in which nitric acid was employed in Camp Winder Hospital, "all were benefited, and most attended with prompt and decided success."

Knives were often whetted in one last final touch on the sole of the operator's boot; the surgeon's coat lapel carried the needles and thread, the silk being moistened with saliva and rolled between the fingers for threading. Of over 2,800 cases of pyemia during the Civil War only seventy-one ended favorably. Contagious and infectious diseases further complicated surgery in the hospital. Vaccination against smallpox was practiced, but infected arms constituted such a problem that dread of vaccination is yet a marked complication of present-day procedure. There was no vaccine against typhoid fever, 1,000 out of every 100,000 dying of this disease each year of the war. Tetanus was rather uncommon, although less than eleven out of every 100 cases got well. This paucity was probably due to the virgin soil of the plateaux and wooded country not enriched by manures, which characterized most of the battlefields.

In injury to the long bones Billings preferred to amputate at once, or "be content with removing the fragments that are completely separated, and apply splints." In this type of injury the mortality was twenty-five per cent. Amputation was done for all penetrating wounds of the knee joint in most hospitals, the site for amputation being at the junction of the lower and middle third of the femur.

The distribution of wounds as recorded in the Civil War was: head and neck, 10.77; trunk, 18.33; upper extremity, 35.71; lower extremity, 35.5.

Mortality in trephining was sixty-one per cent. The silver probe, a slender flexible finger used to detect the course of bullets, often carried infection deep into the wound as well as produce trauma and hemorrhage. The conservative surgeons did little trephining, simply lifting the bones when possible and removing pieces driven into the brain tissue. It was observed also that bullets entering the posterior part of the cranium were more fatal than frontal penetrations.

also that bones of the face had great recuperative power.

Penetrating wounds of the chest were treated in the main like flesh wounds, except that oftentimes lint was applied dry to close the wound. When air and blood were escaping, some sealed the wound with collodion to give temporary relief. Tapping for empyemia was suggested by Dr. Howard, but was not approved by the majority. A paper by Dr. J. B. Smith (1864) on resections and amputations states the good results of introducing a small catheter into the cavity of the wound "to drain it of the offensive pus. In resections of the shoulder this is of special importance." A metal spring was used by a few to keep open the suppurating wound of the chest. After the Battle of Gettysburg one hernia of the lung was ligated with favorable result, as was true also of a hernia of the pancreas. Chest wounds claimed a mortality of thirty-five per cent in this battle. The eccentric course pursued by the old round balls has often been referred to, but one of the most remarkable is the case of General Philip Keraney, who was killed at the Battle of Chantilly, September 1, 1862. While reconnoitering in advance of his troops, he was surprised by the advance guard of the enemy and, wheeling his horse, leaned over the animal's neck while retreating. He was fired on and killed, though no external wound was to be seen, and it was not until the body was prepared for burial that discovery was made that a bullet had entered the anus and ranged up to the lung. (Pennington.) In penetrating wounds of the abdomen J. S. Billings says the number of deaths from this form of injury was thirty-four per cent of the whole number of deaths in field hospitals and fifty-five per cent for the type. Treatment consisted of returning the viscera and applying simple dressings. "If protrusion is a small knuckle of omentum," some surgeons left it for occlusion, while some sealed it with collodion. (Billings recommended the latter.)

There are a few surgeons of the Civil War to be classed among the discerning nobility, whose observations were in advance of their time. S. D. Gross, who shared with W. W. Keen the title of Nestor of surgery of their day, advised: "I would also exhort them [the young men] in a special manner to take good care not only of the lives of their countrymen, but also of their limbs mutilated in battle. Conservative surgery has at the present day claims of paramount importance upon the attention of every military practitioner." This advice was given in the early light of surgery as an art. Before the coming of anesthesia the greatest surgeons were those who could operate most swiftly. Three minutes was a record for the removal of a limb or for other difficult surgical procedures. Then came the discovery of anesthesia with time for careful dissection and scientific control of conditions during surgical operations. He also believed "torsion unworthy of confidence in field surgery, and the same is true of styptics except when the hemorrhage is capillary or the blood oozes from various sockets." The mortality for the four major amputations during the war was about forty per cent.

J. Julian Chisolm, who prepared the "Manual of Surgery for the Use of Surgeons in the United States Army," gave many excellent pieces of advice, among them:

"Ligations of the arteries are thought more to resemble the lessons of the dissecting room than any other class of operations on the living subject; and certain it is that their previous rehearsal on the dead will often save much mangling and pain to the living."

"Ligatures should be carefully waxed to prevent slipping and loosened by gentle retraction." (It was the custom in those days to leave one end protruding, and after eight or ten days for small vessels, and two or three weeks for large ones, to pull them out. Death from secondary hemorrhage was a common occurrence.)

For amputations he directed "the skin must be carefully shaved for several inches above and below the line of incision."

"Equally unphilosophical and more injurious, in our opinion, than even the use of the last class of sedatives (antimony and ipecac) is the time-honored absurdity of venesection."

"It is well-known that gunshot wounds show a constant disposition to suppurate and often to slough. This process of suppuration is not necessary to the healing of the wound, and should be kept in subjection as much as possible. Keep away all hot dressings which invite blood to the part. Vote poultices and greasy pledgets a curse, and eject the dirty, troublesome applications.

"The endless list of emetics, purgatives, diuretics, and diaphoretics can with decided benefit be dispensed with."

John S. Billings criticized that "too much surgical work was attempted in cases of injury of long bones. If a ball smashed a femur, some surgeons wanted to get out all of the fragments, although in doing so they made the injury more severe."

These men bear evidence that they were on the threshold of a medical world beginning to find itself in the field of science.

No better stock taking of surgery during the Civil War can be had than by the lamented and scholarly George A. Otis, whose untimely death was no doubt due to the enormous labor of compiling the three volumes of "The Medical and Surgical History."

"That the experience acquired during the war should have added largely to every subject connected with military surgery was not to be anticipated. But it may be safely asserted that it has advanced the boundaries of our knowledge. Even in the very difficult field of investigation presented by the wounds and injuries of the head, we have learned something. Surgeons have been schooled to deal with the most ghastly injuries of the face without dismay, to obtain unexpected results, and to accomplish favorably reparative operations from which formerly they would have recoiled. And they have been taught the futility of tying the great arterial trunks of the neck for hemorrhage from face wounds. The true principles of treatment of wounded arteries in the neck is now generally understood; and while, before the war, there were few surgeons who chose to undertake operations on the great vessels, there are now thousands who know well when and how a great artery shall be tied. Our information respecting injuries of the vertebral column has been augmented; and, passing to the wounds of the chest, we find a complete revolution in theory and practice. Without further illustration, we may claim that the additions to surgical knowledge acquired in the war are of real and practical value."

W. W. Keen, in later years the first to bring back antisepsis to Philadelphia from his German tutelage, one of the first teachers of pathological anatomy, and a worthy contributor to postwar literature, observed: "Three things are impressed upon my mind as a result of this review of the surgery of the Civil War: (1) The utter inadequacy of our present system of enlargement of the medical corps—incompetency of men and parsimony of congress blamed. (2) Medical officers should have substantial control over sanitary matters, such as camping places, water supply, latrines, etc. (3) Those who made a fearful outcry as to the sufferings of the soldiers in the Spanish-American War did not know what suffering was as experienced during the Civil War. That men, especially those of the defeated army, must often lie on the battlefield one, two, three, or more days before they can possibly be attended to is part of the grim penalty of war. Those of us who went through the Civil War are the most anxious to avoid another war. Only a righteous and noble cause can justify such sacrifices and suffering."

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TREATMENT OF RECENT FRACTURES OF THE NECK OF THE FEMUR BY MOORE NAILS*

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THE METHOD of treating fractures of the neck of the femur by internal fixation, with metal nails and screws, is not a recent one, however, during the past few years, the technique has been improved, which has caused the procedure to become more generally used. The improvement of the technique maintains better fixation, has lessened the operative risk as well as the mortality rate.

A review of the reports of nonunion by other methods and treatment show that there are various findings of nonunion from fifty per cent to no nonunion, however, the latter reports are very rare. The average nonunion in most cases reported by other methods is about forty per cent, with the mortality rate entirely too high. Such reports indicate to the authors that the abduction plaster cast and bed traction methods are not as satisfactory as desired.

Certain techniques of internal fixation of intracapsular fractures are spoken of by their authors as simplified. They are simplified as regards the amount of surgery and shock to the patient when the procedure is indicated and performed by experienced surgeons. The operation, however, is not a simple one. It demands the best surgical judgment and ability as to its indications and procedure of the operation. Serious catastrophes can result from the operation by inexperienced surgeons.

Internal fixation of fractures of the neck of the femur is not a panaceal treatment, and it should not be considered as such. Taking for granted, however, that even though we will not obtain any more union in fractures of the neck of the femur by the internal fixation method, we feel that we are justified in carrying out such technique because:

(a) There will no doubt be a lessened mortality.

(b) The mental attitude of the patient is entirely changed; as a matter of fact, such patient which has been operated on with this technique feels that he has a few more years of normal life and activity, instead of being delegated to a life of invalidism. It is only necessary for the surgeon to see the mental attitude of a patient who has had the operation to become convinced of the optimism of the patient. One of our cases had broken her hip a few years previous to her recent hip fracture and had been treated by the Whitman cast method. It was, indeed, convincing as to the patient's happiness and comfort and definite ideas as to the advantages of the method of internal fixation as compared to the cast method.

(c) The economic status is improved, such as shortened hospitalization and nursing.

(d) The patient is usually out of bed, sitting up, within a week or thereabouts following the operation. There is no necessity for prolonged cast fixation which invariably causes disabilities about the hip and knee and other complications which may and do cause death.

The cases in this series are fifty in number. The oldest was eighty-five years old, the youngest twenty-one years old, the average being fifty-eight. There were twenty-one males and twenty-nine females. The oldest postoperative case is three years and ten months. No postoperative death occurred. All were transverse fractures except one impacted and one oblique. Spinal anesthetic was used in most cases, four cases had local, three had general, combination of nitrous oxide and ether. Excluding a compensation case who spent thirty-four days in the hospital, the average period of hospitalization was twelve days, the shortest being five days. Seven developed nonunion. There is no doubt that in two cases the patients commenced weight bearing too early, were not cooperative, and in one case there is a possibility that an interposition of soft structures between the fragments was present. None of these nonunion cases have been explored.

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*Read before the Tennessee State Medical Association, Nashville, April 12, 13, 14, 1938.

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The authors feel that previous to the use of the technique of taking lateral views and the reduction method as described by Leadbetter in hip fractures at least ten per cent of nonunion cases were due to improper reduction. With such valuable contributions there is no justified reason now for any hip fracture to not be properly reduced in the early stage. Proper reduction is one of the most important procedures in treating intracapsular fractures.

The various advantages and disadvantages in certain types of internal fixation will not be discussed. It is the author's feeling that the surgeon should use the method with which he is most familiar. We prefer the Moore nails because they are easily applied, they have three points of fixation which produces a certain tension which prevents displacement. We have found that three nails inserted at different levels and angles through the fragments of the femur neck fracture into the femur head will stand more strain and maintain better fixation than one large nail alone. The Moore nails displace less bone, and if an error is made in one nail's application, it can easily be reapplied without too much trauma or bone displacement within the fragments. As a matter of fact, Moore recommends that several drill holes be made up through the neck and into the head, thereby leaving channels through which capillary loops can travel upward, producing a better blood supply and osteogenesis to the head. Moore states that Bozson, who introduced this idea, unwinds a regular bone drill and believes that he leaves small bone chips along the passageway. Moore states that he usually places from four to six drill holes about the head and neck; however, if he has to reinsert any of the pins, he takes this into consideration in numbering the additional holes.

Our technique is similar to the one described by Moore with a few variations. Briefly, it is as follows: The patient is placed on a fracture table with a cassette and proper padding beneath the patient. The fracture is reduced by the Whitman-Leadbetter technique, radiographic checks are then made, always taking lateral and anteroposterior views. If reduction has been accomplished, an incision about four inches long is made directly down from the greater trochanter, the nails are driven in, and radiographic rechecks with the same technique as described above are carried out. If the nails are found to be properly applied, the distal fragment is impacted against the proximal fragment, the nuts are then screwed up, and the nails are gently tapped, a small wire is applied around the nails, and the nails are then cut away near the nuts and the wound is closed. Nothing but a gauze-adhesive dressing is applied. The patient is allowed to move about in bed at will. It is insisted that they sit up in a semireclining position by the second day and are usually out of bed in a wheel chair on the fourth or fifth day, and going some by the eighth or tenth day.

No weight bearing should be allowed until radiographic checks show a continuity of the bone and a disappearance of the fracture line, which seldom takes place before three months following the operation. The usual radiographic findings when union occurs in these cases is that there is a definite continuity of bone tissue and a disappearance of the fracture line. No external callous is present. Frequent radiographic checks should be made of the fracture following weight bearing and the patient should be able to discard all supports within four or five months following internal fixation in the average fracture.

We have done internal fixation in fractures of the neck of the femur with the Moore nails in certain delayed or nonunion cases. Such method, however, should not be used unless full exposure and exploration of the head and fragments are carried out so far as viability of the head is concerned, after which the interposed tissue between the fragments is cut away and the bone over the fragment ends curetted. Osteoperiosteal grafts should be placed around the fragments. We have done two such cases with good results. We feel that heretofore viable femur heads have been removed in old intracapsular fractures which should have been nailed as described above, thereby obtaining better functional hips than by certain reconstruction operations.

We do not suggest that the nails be removed unless they become loose and cause pain. In five cases we have had to remove the nails, which was done under local anesthetic. The chemical reaction of the nails in such area is no different than the chemical reaction which follows the introduction of such material in all other bones of the body; in other words, some of these nails have to be removed in certain individuals, while others do not demand it.

MODERN X-RAY THERAPY*

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FROM THE BEGINNING of the world the practice of the art of healing has been shrouded in mystery and tinged with romance. The priests of ancient peoples who exorcised the devils of disease and the medicine men of primitive tribes have always assumed supernatural powers. In the middle ages doctors surrounded their calling with an atmosphere of secrecy and obscurity. Delvers into the occult, students of alchemy, and searchers for the philosophers' stone, they appealed to superstition rather than intelligence, and to fear rather than reason. Within the reach of some of our own memories even reputable members of the medical profession acquired an air of ponderous dignity, and hid themselves behind the whiskers of austerity and under the plug hat of arrogant superiority.

Since that winter night when Roentgen first saw on the glowing screen the shadow of the bones of his own hand, the rays which he named "X," the unknown, have appealed strongly to our imaginations. The crackling sparks, the whir of machinery, the darkened rooms, the ghostly glow of fluorescent screens, the method of their production, and their mysterious penetrative power have all suggested that the odor of ozone is not infrequently mingled with that of brimstone. So it is not surprising that during the first two decades after Roentgen's spectacular discovery the therapeutic use of his weird rays fell into disrepute. But about 1915, following the invention by W. D. Coolidge of the hot cathode tube, X-ray therapy began to experience a renaissance. The construction of larger and more powerful transformers, the study by scientific minds of the physical and biological problems involved, the invention of simple, accurate instruments for measuring the quality and intensity of the X-ray beam, and finally, the adoption of an international unit of measurement, all stimulated increased interest in the art and produced a considerable degree of confidence in the results to be expected from therapeutic radiation. Long ago enough was learned about the physical properties of X-rays, their action on normal and diseased cells, and the results to be expected from their proper use that they can be discussed in the same manner as any drug.

Definition.—X-rays are a form of light differing from visible light only in having a much shorter wave length.

Origin.—They are produced by the impact of ions against a solid surface or against each other.

Physical Properties. — X-rays penetrate substances which are opaque to ordinary light.

It is not difficult to understand the general principles involved in the effect of variations in physical factors upon quality, intensity, and distribution of X-rays. They can be summarized as follows:

Voltage.—Raising the voltage increases intensity and hardness and tends to promote more nearly homogeneous distribution; that is, it raises the percentage of rays reaching the deeper parts of the body (depth-dose percentage).

Distance.—Increasing the distance between the tube and the skin (the anode skin distance) has no effect on hardness, but lessens intensity, and raises the depth-dose percentage.

The selection of the proper combination of physical factors to be used in various types of X-ray therapy is difficult and must be considered from the viewpoint of economy in time and cost of operation. There is, in practice, a limit to the increase of all factors, even voltage. Very high voltage X-rays (600 to 1,000 kilovolts) with heavy filtration have been advocated, but there is no proof that they are any more destructive to cancer cells, or any less injurious to the skin and other normal tissues than those produced at 200 kilovolts. It is admitted that "supervoltage" X-rays increase the depth-dose percentage, and permit more nearly homogeneous distribution of radiation, but the question as to whether they damage tumor cells more, and normal tissues less, than softer rays, is, at the moment, unanswered. Until this proof is forthcoming the established laws of physics give little justification for million-volt X-ray therapy.

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*Read before the Tennessee State Medical Association, Nashville, April 12, 13, 14, 1938.

Physiological Action.—The law of Arndt-Schulz that small doses of X-rays stimulate cells, medium doses inhibit the growth of cells, and large doses destroy cells, is a simple, and in many respects a very satisfactory statement of what is known about the action of X-rays upon normal tissues. With some elaboration and qualification it will serve as the foundation for a clear concept of what we try to accomplish in X-ray therapy.

There is no selective effect of X-rays, and the fact that certain highly differentiated cells may be destroyed or inhibited in their growth by doses too small to produce any visible effect on ordinary epithelial cells is easily explained by the different susceptibility of various types of tissue. Lymphocytes and lymphatic tissues are highly sensitive to radiation, while cartilage and bone are highly resistant. In general, sensitivity to radiation is proportional to the degree of differentiation. This peculiar sensitiveness to radiation on the part of differentiated cells is well illustrated by the ease with which very small doses of X-rays destroy the virility of such highly specialized epithelial cells as spermatozoa.

Among diseased cells which show a pronounced sensitiveness to the action of X-rays are those of hyperplastic connective tissue, and young rapidly growing cells of the embryonal type. Excessive growth of the cells of the horny layer of the skin is checked by the action of X-rays. The analgesic effect of X-rays is also well known, although we do not exactly understand how it is produced. It is used mostly for the relief of itching and neuralgic pain. They are, however, used with good results in several inflammatory conditions.

In general, therefore, X-ray therapy is indicated when it is desirable to produce one or more of the following effects:

1. Stimulation
2. Inhibition of the growth or function of glands
3. Solution of hyperplastic connective tissue
4. Reduction of lichenification
5. Relief of pain or itching
6. Reduction of inflammation
7. Destruction of malignant growths

Therapeutics.—For the purpose of illustration, I shall mention a few conditions in which each of the seven main effects of X-ray therapy are indicated.

Stimulation.—It is probable that there is no true stimulative effect of X-rays, and that the changes which we speak of as due to a stimulating dose are really processes of repair following an injury caused by irradiation. This conception of stimulation is not so paradoxical as, at first thought, it may appear.

Sunlight, for instance, is undoubtedly stimulating, and yet the initial effect of sunlight in an amount large enough to produce evidence of simple inflammation can hardly be anything but injurious to the cells of the skin. Perhaps, in spite of all our theories, we might be nearer the truth if we held the simple belief that the individual cell is always injured by the action of X-rays, and that the degree of such injury depends upon, first the size of the dose received, and second, the sensitiveness of the cell to radiation.

The so-called stimulative effect of X-rays is used in many skin diseases, especially those characterized by sluggishness and dryness. Attempts have been made, without much success, to apply it to glands deficient in function, including those of the gastrointestinal tract, and especially the ovaries. Reports of successful rejuvenation by X-ray treatment, however, have been almost entirely confined to works of fiction.

Inhibition.—X-rays inhibit the function and growth of cells. Differentiated cells, such as those composing glands and hair follicles, physiologically active cells, young cells, cells about to divide, lymphoid tissue and tissue of the embryonic type are all markedly radiosensitive. It is upon these facts that a large part of the indications for X-ray therapy depends, and it is by them that we are able to explain the results obtained. Conversely, they show why X-ray treatment of many conditions is futile. For example, because the ovaries are highly sensitive to radiation one would expect their function to be readily inhibited, and such is the case. On the other hand, we would not, or should not, expect to be able to stop the growth of an osteochondroma with any amount of X-rays less than a destructive dose to the overlying skin because cartilage and bone are both less sensitive to radiation than any of the elements of the normal skin.

The list of diseases in which the inhibitory action of X-rays is used is long. It includes, for example, many skin diseases characterized by hyperactivity of the glands, such as acne, seborrhoea or hyperidrosis; diseases in which epilation is desirable, such as tinea or favus; hyperfunction of ductless glands, such as hyperthyroidism; persistent thymus, uterine hemorrhage of the kind that can be relieved by checking ovulation; the leukemias, and many other conditions.

Solution of Hyperplastic Connective Tissue.—X-rays act as a direct solvent of excessive connective tissue such as that in keloids or in uterine fibroids. They seem, however, to have little or no destructive effect on normal connective tissue.

X-rays affect fibroid tumors in two ways: first, as a direct solvent of connective tissue, an action which is easily observed when X-rays are applied to keloid; and second, by inhibiting or abolishing the internal secretion of the ovaries. The latter effect of X-rays, the so-called "dry castration," is all that is necessary to cure excessive hemorrhage of the menopause, or hemorrhage due to fibrosis or small fibroid tumors.

Among the contraindications to X-ray treatment of fibroids and uterine hemorrhage are any conditions which will require operation such as coexistent carcinoma of the fundus, cysts, and pyosalpingitis or other inflammatory diseases of the adnexa. It is absurd to subject a patient to the discomfort and expense of X-ray treatment when it is evident that she will have to undergo an operation for some other disease. Large fibroids, extending above the brim of the pelvis and producing pressure symptoms, should be removed surgically. It is possible to dissolve them with X-rays, but the treatment requires so much time, and the toxic symptoms produced by the absorption of the tumor as it is destroyed are so unpleasant, that hysterectomy is preferable in spite of its high mortality rate. Occasionally we must make exceptions to this rule, and treat patients who are inoperable because of severe hemorrhage or some constitutional disease.

Any patient whose hemoglobin is less than sixty-five per cent should be treated with X-rays no matter how large her tumor or what complications may be present. The operative mortality is so high in anemic patients that hysterectomy is not justified, especially since we have so efficient a method of controlling hemorrhage as radiation. A second positive indication for X-ray treatment is any constitutional disease which renders the patient a doubtful surgical risk.

There remains a rather large group of cases in which positive indications or contraindications for either surgical or X-ray treatment are lacking. The patients have no pressure symptoms, and are not so depleted by loss of blood that an operation is inadvisable. There is no reason why they should not be permitted to make a choice. They may be told that the advantages of an operation are that it is quick and certain. Its disadvantages are a certain amount of danger, the anesthetic, some pain, and the expense of nursing, hospitalization and loss of time.

The advantages of X-ray treatment are its relatively low cost, its safety, and the fact that usually, but not always, the patient can go about her usual occupation. X-ray treatment has the disadvantage of being slow, and, in about half the cases of producing a certain amount of nausea and feeling of depression.

The dose required to produce a temporary amenorrhea is about 250 r, delivered to the ovaries. To produce a permanent amenorrhea, from 400 r to 500 r must be delivered to the ovaries. This dose is also large enough to shrink the average fibroid tumor enough so that it will not produce pressure symptoms.

Lichenification.—The well-known effect of X-rays on overgrowth of cells of the epidermis, as for example, in psoriasis, lichen simplex, and keratoses, is probably produced by inhibition of cell division and activity.

Anodyne Effect.—There is no doubt that X-rays often temporarily, and sometimes permanently, relieve itching. When the itching is due to an eruption it usually disappears when the eruption heals. It is not so easy to explain the relief of pruritus ani by radiation. Probably it acts by inhibiting chemical action and cell proliferation.

It is not so certain that X-rays will relieve pain except when pain is due to a lesion that can be affected by irradiation, although many writers have reported what seems to be an analgesic effect upon neuralgic pain.

Inflammation.—While X-rays are not germicidal they do exert a beneficial effect upon some inflammatory processes. No satisfactory explanation of this effect has been made.

X-rays are directly destructive to some fungi such as those causing sporotrichosis and blastomycosis. They may have some destructive effect upon tinea epidermophyton, but in tinea tonsurans the effect is mechanical. The hairs fall out and carry the organisms with them.

For some reason not completely understood, X-ray treatment often effects an almost miraculous cure of erysipelas. The dose is about 200 r, which can be repeated the following day. Improvement, when it occurs, is usually observed within thirty-six hours after the first treatment.

Many other inflammatory conditions are treated with X-rays. For example, my associate, Dr. J. V. Prouty, treated thirty patients with discharging ears and mastoid disease during the month of January. Twelve of these patients certainly, and fifteen of them probably, would ordinarily have been operated upon; only three required operation and all the patients with acute or subacute otitis media recovered.

Destruction.—All that has been said about the inhibitory effect of X-rays applies with equal force to their destructive effect. As a rule, it is only upon malignant or potentially malignant growths that the full destructive powers of X-rays are loosed. Because they are composed of young cells and cells about to divide, they are often so sensitive to radiation that they may be destroyed by a dose only mildly injurious to the surrounding structures.

Treatment of Skin Cancer.—The treatment of skin cancer with X-rays has given almost uniformly good results, cures in cases treated before metastasis has taken place being between ninety and ninety-five per cent. Very occasionally an epithelioma is so resistant to the action of radiation, or so highly malignant, that cure is impossible no matter how vigorously it is treated. In the great majority of cases, however, failure to cure is due to insufficient treatment. Treatment may be discontinued too soon because the physician, or the patient, or both, decides that the healing of the lesion indicates that cure is complete. More often the patient abandons the treatment because he is frightened by the appearance of a reaction or is discouraged by his friends. For practical reasons, therefore, it is advisable to attempt complete destruction of the epithelioma at once. This can be done by giving the total amount of radiation required for cure so rapidly that the series is completed before a reaction appears. Destruction of the lesion by electrocoagulation at the first visit of the patient serves the same purpose, and is entirely justifiable, when more adequate treatment is not available or is refused. Although the cosmetic results of the treatment of epithelioma with radiation are often surprisingly good, one should not be deterred from using adequate dosage by the fear of sequelae such as atrophy and telangiectasis. Permanent damage to the skin in many cases is to be expected and has the same significance as a surgical scar.

The present high recovery rate in cancer of the skin and lip is due largely to education. Before the advent of X-rays and radium, many early skin cancers and cancers of the lip were cured by surgical removal or other destructive procedures. Many others were allowed to progress to a hopeless stage because of ignorance, poverty, or neglect. Intelligent people have now learned to insist upon an exact diagnosis of any questionable skin lesion. They have learned that almost all cancers of the lip can be cured, if attacked vigorously and skillfully at a reasonably early stage by such destructive methods as irradiation and electrocoagulation, and they have learned that such cures can be effected without general anesthesia, hospitalization, or "the knife." Probably their knowledge of these simple facts and their willingness to act upon their knowledge have done more to raise the recovery rate in cancer of the skin than the superiority of modern methods of treatment over those available at the beginning of the century.

X-ray Treatment of Internal Cancer.—It has been shown that it is possible, technically, to deliver as large a dose of X-rays as we may desire to any part of the body. One might naturally assume, therefore, that since a dose destructive to an epithelioma can be given to a deeply located cancer, its destruction is equally assured. This, unfortunately, is not the case, as can easily be demonstrated by trial. If all patients with miscellaneous cancer who appeal to the roentgenologist for help are treated skillfully, carefully, and with adequate dosage, an occasional almost miraculous cure will be seen; most of the patients will receive a satisfactory amount of palliation, but, in the end, the great majority of them will die of the disease. The reasons for failure may be grouped under four main heads.

Degree of Malignancy.—Some cancers, including a few epitheliomas, grow and metastasize so rapidly that death is inevitable regardless of how radically they may be removed surgically, or how ruthlessly the destructive effects of X-rays are applied. Highly malignant cancer is more common in young people than in old.

Kind of Tissue Involved.—Even mildly malignant epithelioma involving cartilage cannot be cured unless the cartilage is completely destroyed. There is so little difference in the sensitivity to radiation of normal and malignant cells in the vagina, rectum, and esophagus that little more than palliation can ordinarily be expected from the treatment of cancer of these organs. Cancer of the cecum seems to respond to X-ray treatment better than when the distal portion of the colon is involved, but, in either case, the possibility of a cure depends upon a radical surgical removal. Cures of cancer of the thyroid are extremely rare in spite of the accessibility of the gland and the fact that marked palliation is seen after treatment.

Involvement of Vital Organs.—It is obvious that if the liver were irradiated sufficiently to destroy cancerous nodules scattered throughout it, its usefulness would be ended and the patient would die from the effects of the treatment. The same is true of carcinoma involving the pancreas, and, to a less extent, of cancer of the lung. In the latter disease, however, some relief from pain and inhibition of the growth can sometimes be obtained from judicious treatment.

Severe Systemic Reactions.—The treatment with effective X-ray dosage of cancer of the stomach, or of any other organ in the upper abdomen, such as the small intestine or the mesenteric glands, is followed by such marked constitutional reactions that it is doubtful if any good is accomplished.

Cancer of the Uterus.—In this country the treatment of uterine cancer is fairly well standardized. It is generally agreed that when a diagnostic curettage shows the fundus to be involved filtered radium should be introduced into the uterus, and a complete hysterectomy done six weeks later. It is also generally agreed that when the cervix is involved radium should be used to destroy the local lesion and heavy doses of X-rays given through several ports in an effort to block extension into the adnexa.

In the last twenty years, the treatment of cancer of the cervix of the uterus with a combination of radium and X-rays has resulted in an increasingly greater number of cures. No doubt the increase in the recovery rate is partly due to improved apparatus and methods, and to greater skill, experience and more courage, but there are also other reasons for it. Most patients are willing to be treated by radiological methods sooner, and, therefore at an earlier stage of their disease, than they can bring themselves to submit to such a dangerous and expensive operation as a radical hysterectomy. Then, too, more women each year are learning the early signs of uterine cancer and more doctors are making diagnostic examinations at the first appearance of those signs. When every intelligent woman knows that any irregular or abnormal bleeding or unusual discharge means that an exact diagnosis must be made at once, and when the physician of every such patient insists upon making an exact diagnosis, no matter how much labor it may require, and in spite of the fact that a biopsy or a curettement may be necessary to complete it, we may reasonably expect the recovery rate in cancer of the uterine cervix to be raised to sixty or seventy per cent. In other words, an intelligent program of lay and professional education could double the number of cures of cervical cancer even with our present methods of treatment.

Cancer of the Breast.—The ideal treatment for cancer of the breast consists in preliminary intensive X-ray therapy, followed by radical mammectomy which includes removal of the affected breast, the pectoral muscles, and the lymphoid tissue from the axilla. Postoperative X-ray treatment to the anterior chest wall and to all parts of the axilla and supraclavicular space in a dosage sufficient to destroy any remaining cancer cells is also recommended. In many cases, however, this procedure is impossible or may be inadvisable. The problem of what and how much is to be done must be determined individually.

Radiation.—Treatment by X-rays is not a substitute for operation. If permanent cure appears possible, radiation should be considered an adjuvant to surgery. However, X-ray treatment alone is proper in advanced inoperable cases as a palliative measure, and in the aged. In the latter group, the tumor rarely progresses to ulceration, and many of the patients will die of some other disease than cancer.

Preoperative X-ray Treatment. — Intensive X-ray treatment four to six weeks before operation is unquestionably an efficient procedure, but in early cases its usefulness may be neutralized by the danger that some patients will refuse or postpone operation in the hope that the resultant shrinkage of the tumor indicates that the cancer has been destroyed. Unless the physician has the entire confidence of the patient, it is advisable either to omit the preoperative treatment or to operate soon after its completion without waiting for the tumor to diminish in size. In advanced cases this objection to preoperative X-ray treatment does not apply, and its use should be strongly urged. In a considerable number of cases in this group X-ray therapy is followed by disappearance of the glandular metastases and definite shrinking of the tumor. Primary breast tumors are more resistant to radiation than the secondary growths. When the former no longer diminishes in size, or begins again to grow, it should be removed.

Postoperative Treatment.—Certain statistics appear to show that patients who do not receive postoperative X-ray therapy live approximately as long as those who are treated. It has therefore been assumed that postoperative irradiation has no value as a prophylaxis against recurrence, and there has been a tendency to advise its use only when a high degree of malignancy, an advanced stage of the disease, or the fear of incomplete removal increases the probability of recurrence. Many roentgenologists are convinced that this tendency is wrong. A more logical interpretation of the data indicates that patients with advanced disease treated with irradiation survive as long as those with more favorable prognosis. The best information indicates that postoperative X-ray treatment, given with skill and courage, increases the five-year survivals about ten per cent when only the breast is involved, and about twenty-five per cent when axillary metastases are present.

May I now say, parenthetically, that ignorance and neglect are not the only things which tend to promote delay in the diagnosis and treatment of cancer? One of these is poverty and another is our insistence upon always doing for every patient what is, theoretically, the best possible thing. Going back again to our illustration of the conquest of cancer of the lip when every one believed the best treatment to be excision of the lesion with radical dissection of the glands of the neck, the death rate was high, not because the treatment was bad, but because to the patients it seemed too extensive, too mutilating, too expensive, too time consuming for what seemed to them to be such an insignificant disease. It was not until simpler, less expensive, locally destructive methods were accepted and applied that any real progress was made in reducing the death rate. May we not apply the same principle to the treatment of other forms of cancer? Why must we always insist upon doing the best possible thing, theoretically, for all patients, when too often our insistence means that nothing will be or can be done for the individual? The patient with early cancer of the breast who would submit to a simple mammectomy, but refuses or postpones a radical operation, because she fears it may spread the disease or cripple her, is just as dead as if we had exhausted all the skill and science at our command and still had failed. Is there not enough poverty, fear, ignorance, and superstition in the world to justify our accepting as our axiom that "to accomplish anything worth while it is necessary to compromise between the ideal and the practical"?

Perhaps I may also suggest that we abandon the idea that it is possible to make a differential diagnosis clinically between early cancer and benign tumor of the breast. The thing is impossible, as even the experts who waste their time going about trying to teach it to their colleagues have learned to their own chagrin and the sorrow of their patients. *The discovery of a lump in the breast is a positive indication for immediate exploratory operation.* When the truth of this dictum is universally established in the minds of physicians and laymen as firmly as the fact that a diagnosis of appendicitis means an operation is established now; then, and not until then, will deaths from cancer of the breast begin to become almost as rare as deaths from cancer of the lip.

Coutard Technic.—About 1920 Coutard began to apply four general principles to the treatment of epithelioma of the pharynx and larynx. Briefly, the principles are as follows:

1. The rays are generated at 180 to 190 kilovolts and are filtered through two millimeters of copper or its equivalent.
2. Treatments are given daily or twice daily.
3. Each dose is small, usually 100 roentgens to each field, as measured in air.
4. The treatments are given over a period of from fifteen to fifty days so that the total dose is much greater than is possible by other methods.

By this method of protracted, fractional, daily dosage, Coutard multiplied many times the number of cures of pharyngeal and laryngeal cancer previously accomplished by other technics. The same principles have been applied to the use of radium with equally good results. The method and its various modifications are now being tested for many other tumors in different parts of the body. The chief objection to the method is its cost.

I believe we have no single therapeutic agent so powerful as X-rays, nor any which is applicable to so many different diseases. Stimulating, inhibitory, anodyne, keratolytic, antiphlogistic, and destructive, what drug, what other agent, in our whole armamentarium can do so much so well? I believe, too, that we are only beginning to learn the potentialities of X-ray therapy. If I may, for a moment, assume the mantle of a prophet, I shall predict that long after the destructive effect of X-rays on cancer has been replaced by some constructive treatment, the list of pathological conditions best treated by X-rays will still be long enough to justify the existence and the efforts of X-ray therapists. The practice of X-ray therapy has become almost a specialty in itself, and, I think, rightly so. It is a specialty which makes many demands upon the skill, training, and experience of those who practice it, and also presents certain economic problems because of the considerable financial outlay required to purchase and operate the necessary equipment. Those who would practice the art well will find that a certain degree of courage is required as well as a mastery of technical details.

BEHAVIOR DISORDERS IN CHILDREN*

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BEFORE considering behavior disorders we must remember two things about children: First, they are born cruel, ignorant savages and they know nothing but what they experience and what they are taught; secondly, they are guided by the same instincts and emotions that adults are.

There are two ways of approaching the subject of behavior disorders. One is the consideration of the disorder itself and from that point working back to the instinctive and emotional drives which were the original causes of the act. Suppose for example, a mother brings a child to a doctor with a history of committing acts of vandalism. It is up to the doctor to dig into the child's previous history—social, mental, and physical—and try and find out why his patient has been indulging in such antisocial activities. This is the approach which is forced upon us as practitioners. On the other hand, the subject can be approached from the instinctive and emotional drives themselves and from that point traced down to the overt acts which cause the patients to seek medical advice. The latter point of view is more satisfactory in presenting the subject didactically to medical students and nurses just as any medical presentation is clearer which begins with etiology and works on through pathology and pathogenesis to symptoms. This also is the manner in which the case had best be explained to the parents in order that they may understand and accept the diagnosis and treatment.

In considering behavior disorders then let us begin with the instinctive and emotional drives which control human conduct. I have listed eight of these and have put them in the order of what I considered their importance:

1. Self-protection
2. Love of parent
3. Rebellion
4. Ambition
5. Revenge
6. Cruelty
7. Jealousy
8. Sex

Unquestionably self-protection is the strongest drive in the child. Love of child is stronger in the adult and sex may be also, but in the child self-protection comes first. When a child feels itself in danger this self-protective instinct or fear complex sets up defense or escape mechanisms according to whether the child fights or runs away. Among defense mechanisms may be mentioned boasting. In this way the aggressive child will attempt to cover up deficiencies which he knows he has. He will tell how many toys he has, how strong he is, how he can run and fight, how rich his father is, etc. It is just as true in childhood as it is in adult life. When a child brags he is trying to cover something up. Another defense mechanism is asking questions. All of us have had the annoying experience of having to answer innumerable questions before being allowed to give a hypodermic. Among the escape mechanisms may be mentioned lying. A child lies when he is afraid to tell the truth. A stern parent is apt to make a liar out of his child. Daydreaming is another defense mechanism and one which often brings the child for medical advice. Daydreaming is escape from unpleasant reality into pleasant unreality. A certain amount of it is physiological, but an unusual amount indicates unhappiness and maladjustment and should be investigated. I recently saw a child who had been promoted from one grade in school to the one above so as to make two grades in one year. From an outgoing, happy child she became silent and a daydreamer. She got along well mentally and physically with the new group, but socially she was not accepted by them. She was not sophisticated enough and they looked down on her. For three years she was left in the advanced grade in the belief she would become adjusted, but there was no improvement. Then she was demoted to her former class and within a few months she was again a popular, happy, outgoing, natural child with no time for daydreams. Another escape mechanism well known to doctors is simulating illness to escape responsibility. A good example of this is the child who vomits every morning because he does not want to go to school. This calls for investigation. It may be due to fear of teacher or possibly a bully has been beating the child after school.

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*Read before the Tennessee State Medical Association, Nashville, April 12, 13, 14, 1938.

The treatment of these defense and escape mechanisms is to find the cause of the fear and either remove it or adjust to it. This sounds simple, but it may be plenty hard to carry out.

Love of parent is second on our list It would be well to look first at this parent-child relation from the other point of view, *i. e.,* the parent's love for the child. This is usually considered to be the strongest drive in the animal kingdom. We are all familiar with examples of mothers who have withstood superhuman tests of endurance while caring for their sick children. Parents feel that no sacrifice of money, time or strength is too great when their children are involved. Now looking at the parent-child relation from the child's point of view we find a much more complex feeling. It may be analyzed into three components: First, love of parent, *i. e.*, the child returns the parent's love; second, dependence which is not the same as love at all; third, realization of the power it has over the parent due to the strong parent-child instinct. It is this third point—the realization of the power it has over the parent—that brings untold difficulties to us doctors in our efforts to care for sick children. For example, the child learns very early in its life when it cries the parents will stop all unpleasant things and do a number of very pleasant things instead. So we have the terrible rumpus that all of us are familiar with when we attempt to examine or treat certain children. Part of this reaction is due to fear, but most of it is done for the purpose of stirring up parental sympathy. The truth of this can be demonstrated by the comparative ease with which the same examinations and treatments can be carried out when the parents are not present. The great difficulty lies in explaining to parents the cause of the child's reaction and convincing them of the necessity of their invisibility. This may be a matter of life and death. This winter I have seen two children desperately ill with pneumonia who refused to go under oxygen tents until their parents had disappeared from the room and had been gone some time. The parents had to remain invisible and inaudible for the duration of the illness because whenever the children recognized their voices they screamed and tried to get out of the tent. On the other hand, I am not one of those who believe that all parents should be excluded from the sick room. Most parents make good nurses and they deserve to be given every chance to take care of their sick children if they want to do it. It is only when the child's reactions show that the presence of its parents imperils the success of treatment that they should be asked to retire from the scene. In such cases one-way visibility screens so that parents can see and not be seen are of practical help.

Ambition usually shows itself in childhood in the very elementary form of attracting attention. The child cannot stand to be ignored and so it resorts to all sorts of tricks to call attention to itself. Parades and dressing up in costume are well-known childhood activities. This ambition to be in the limelight is the cause of many conditions which bring children to doctors. It is a frequent cause of anorexia. Why should a child eat when he can make himself the center of attention by refusing to do so. Fits may arise from the same cause. Most of us have seen children having so-called fits which are put on for the obvious purpose of frightening the family. Voluntary or psychic vomiting has the same origin. Many children can vomit whenever they want to and they do it to provide excitement in school or in the nursery. I recently saw a boy of four who almost broke up his nursery school for three days by vomiting on the floor while exercises were going on. There was nothing the matter with him except that he wanted to show off his talent. Vandalism may be caused by ambition to be noticed. Gangsters and so-called bad boys are publicity hounds and eat up the stories of their exploits.

The treatment of these various undesirable forms of ambition to be noticed is to pay as little attention as possible to the undesirable exhibition itself and to divert the attention to something worth while. Give these children plenty of praise for what they do well because children of this type crave applause and attention and will stop their undesirable activities when treated with understanding and affection.

Rebellion against authority is characteristic of the human race at any age. Psychologists call it negativism. It causes more behavior difficulties than all the other drives. Most children between the ages of one and four years are in a chronic state of rebellion for the reason that they cannot respond mentally or physically as quickly as their adult caretakers demand. Rebellion is nearly always caused by a clash of personalities—some people can make children do anything; others start rebellion the minute they give an order. Too strict discipline can stir up rebellion because the children feel they are being unjustly treated and their fighting spirit is aroused; on the other hand lax discipline can cause rebellion because the children know they can get away with it.

Innumerable difficulties which bring children to doctors have their origin in rebellion. It is a common cause of enuresis. I recently saw a perfectly normal eleven-year-old boy who had not wet the bed since he was two who began wetting the bed again in protest against his mother's ideas of discipline. I have seen four cases of encopresis (voluntary soiling) which stopped immediately when put in hospitals where their parents and caretakers were not allowed to see them and which began again as soon as they were sent home. Most anorexia is protest against the demand that children eat more food than they want. All the tonics and dainty cooking in the world will not make them eat until the demand is withdrawn. Too much emphasis by doctors, school teachers, health nurses, and parents on age-height-weight tables is responsible for most of this. The so-called underweight child may be perfectly healthy and if food is stuffed into him beyond his appetite he will rebel. Vomiting may be a protest against a number of things such as overstuffing of food, going to school or anything else the child does not want to do. Temper tantrums are obviously rebellious in origin and breath holding spells are a form of tantrum. Vandalism has its origin in rebellion, although it later becomes an attention attracting mechanism also.

Prevention of rebellion can usually be accomplished by parents and caretakers who observe the following three rules: First, the persons in charge of children must be in complete emotional control of themselves, *i. e.*, they must not get angry or frightened because when they do this their control over the children is weakened or disappears. Second, they should be umpires rather than leaders. Children have plenty of initiative about selecting their games. What they need is guidance in learning how to play fairly and how to do things properly. Third, they should not interfere with children's activities unless the children are in danger of hurting themselves or hurting someone else or interfering with the rights of others.

Treatment of rebellion consists mainly of separating or harmonizing the clashing personalities that caused it. If the clash is between the child and his nursemaid, it may be necessary after reasonable efforts have been made to straighten things out to dismiss the nursemaid. However, if the clash is between the child and one or both of his parents the solution is not so simple. The situation must be explained to the parents and they must consider it in a calm unemotional manner and be perfectly fair and honest with themselves and willing to take blame and to do what may be necessary to bring harmony. Sometimes solution is easy—sometimes it is very difficult because of the inherent incompatibility of personalities. Separation of the uncongenial personalities for long periods of time such as summer camps or boarding school is a great help. Forceful methods of control such as corporal punishment are very likely to make things worse. You cannot beat rebellion out of a child who has courage and if he has no courage you will make him more cowardly if you beat him.

Revenge is a powerful human emotion and may bring a child to the doctor because of enuresis, encopresis or some form of vandalism.

Cruelty is born in every human being and one of the objects of training is to teach control of cruel instincts. Little children must be watched constantly to see that they do not hurt each other or hurt their pet animals. Older children have no compunction about making fun of physical deformities in their playmates, *e. g.*, lameness, strabismus or tuberculous spine. Adults may treat children with physical cruelty as by unnecessarily beating them or hurting them or with mental cruelty as by harsh sarcastic criticism. Children treated in that way are likely to retain the cruel instinct and take it out on others later.

Jealousy is an instinct found throughout the animal kingdom. Children are keenly alert to favoritism and resent it with all their might. A common source of jealousy is the arrival of a new baby in a family which had only one child. The older child may react to the new arrival in several ways. It may resent the new baby and try to hurt it and will hurt it unless carefully watched. It may revert to infant ways such as bed-wetting and soiling its clothes and baby talk in order to get the same attention the baby does. It may develop all sorts of attention attracting mechanisms to regain the place in the spotlight which it formerly held. Sometimes complete change of disposition takes place, and I have recently seen two children about three years old who changed from happy amiable youngsters to irritable little rebels within two months after the arrival of new babies.

The treatment of jealousy, of course, is to be perfectly fair and show no favorites, but with very little children this is hard to carry out.

The sex or mating instinct I have purposely put off until the last because before puberty I do not feel it has much strength. There seems to be a physiological attraction between fathers and daughters and between mothers and sons, but the attraction seems to be more on the part of the parents than the children.

Behavior disorders and mental hygiene in general is one of the lines along which pediatrics is making rapid strides. It is important in all branches of medicine and surgery, but particularly so in pediatrics because communication with the patient is so difficult. A doctor may have benefited by years of pediatric training, but he will have great difficulty getting on with his patients outside the hospital until he has made a study of this subject.

The great practical difficulty in working with behavior difficulties is getting the family background and interrelationships. It takes so long to get the necessary information. This is especially true in office practice where parents and children are surrounded by inhibitions and are trying to put the best foot foremost. If we could put on a cloak of invisibility and sit in the home for a few hours we could usually spot the difficulty. There are two mistakes that doctors make in cases of this kind—first they ask too many questions and do not let the parents tell their own story, and second, they do not give the child a chance to give his version of the difficulty by talking to it alone. The reason these mistakes are made is obvious—it takes too much time to do it the correct way. Some pediatricians have employed trained psychiatric social workers to take their histories and have found it worked well.

In conclusion, we must remember that pediatrics is the study of the whole child—his physical, mental, and social being—and if we would understand these rapidly growing, inexperienced, sensitive individuals we must approach them with understanding and courtesy as well as knowledge in order to gain their confidence and help them.

CLINICAL EXPERIENCES WITH ACETYL-BETA-METHYL-CHOLINE-CHLORIDE IN THE TREATMENT OF FUNCTIONAL DYSMENORRHEA

JOHN C. BURCH, M.D., and DORIS PHELPS, Ph.D., from the Department of Obstetrics and Gynecology, Vanderbilt University School of Medicine, Nashville

IT IS WELL KNOWN that in many patients suffering from functional dysmenorrhea the typical menstrual cramps are accompanied by symptoms indicative of instability of the autonomic nervous system, such as gastrointestinal spasticity, irritability of the bladder, or vasomotor disturbances of various types. This fact suggested the possibility that menstrual cramps might be relieved by the administration of acetyl-beta-methyl-choline-chloride, a drug, the effects of which are similar to those produced by parasympathetic stimulation.[1, 2, 3] Acetyl-beta-methyl-choline-chloride has been used successfully in the treatment of paroxysmal tachycardia,[3] peripheral vascular disease,[3, 4] constipation, abdominal distension,[3] chronic arthritis,[4] and various other conditions involving some dysfunction of the parasympathetic innervation. The action of the drug in the human has been studied extensively by Starr and collaborators.[3] Their results indicate that the drug can be administered as outlined below, and in even larger doses, without fear of harmful cr undesirable effects. The effects of the drug become apparent within fifteen to seventy-five minutes after oral administration and last from one-half to one hour or longer.

In order to put to experimental test the possibility suggested above, namely, that acetyl-beta-methyl-choline-chloride might be effective in relieving menstrual cramps, the drug* was administered to twenty-one patients with dysmenorrhea. These patients ranged in age from twenty to forty-two years, the majority from twenty-five to thirty years. With one exception the patients were nulliparae, and all of them had suffered from dysmenorrhea since adolescence. In all of them, pelvic pathology as an etiologic factor could be excluded. In other words, in all twenty-one cases, the dysmenorrhea was of the type commonly designated primary or functional. Crystalline acetyl-beta-methyl-choline-chloride, dissolved in water, was taken by mouth as follows: 200 milligrams at onset of cramping, followed by 100 milligrams at intervals of three hours throughout the cramping period. Results were as follows:

Eleven patients reported partial or complete relief of symptoms. The total amount of the medicine taken during one menstrual period by the patients in this group varied from 200 milligrams to 900 milligrams, the average dose being 400 to 600 milligrams. It should be emphasized that the total dosage was regulated by the duration of the cramping period. In all cases, maximum benefit was obtained from the first dose of 200 milligrams, subsequent doses serving only to maintain the degree of relief experienced. Four of the patients in this group were treated during only one menstrual period, the remaining six continued treatment from two to eight months, the average duration of treatment being six months. Results were consistent except that one patient experienced no relief during one menstrual period but was more or less completely relieved during five other periods. Patients in this group who would otherwise have been confined to bed were able to carry on their usual activities while under treatment.

One patient was nauseated before taking the medicine and was unable to retain it.

Four patients treated during one menstrual period each failed to report results.

Five patients with very severe symptoms experienced no relief during one menstrual period and did not continue treatment. The total dosages in this group ranged from 200 milligrams to 600 milligrams, with an average of 400 milligrams.

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*Mecholyl, supplied by Merck & Company through the courtesy of Mr. A. W. Veazey.

None of the patients treated noted any effects of the drug other than the relief of pain.

The series of patients is, of course, small to permit of definite conclusions with regard to the effectiveness of acetyl-beta-methyl-choline-chloride in the treatment of dysmenorrhea. The results are sufficiently encouraging, however, to justify further investigation.

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THE NEWBORN IN THE HOSPITAL*

JOHN ZAHORSKY, M.D., St. Louis, Missouri

IN THE MODERN arrangements and construction of a hospital certain procedures are thrust upon the medical profession without our advice and consent. These arise from various sources; as the architect, hospital superintendent, nurses, and even hospital directors. Here I want to direct your attention to the obstetrical division of the modern hospital. The mothers are made comfortable in a single or double room, or even a ward, and the newborn infants are congregated in a separate compartment. I have not taken the time to trace the origin of this arrangement, but it is improbable that a pediatrician was consulted in its establishment. The primary objection to this arrangement is that the infants are subject to the dangers of regimentation; that is, as a group they are fed and nursed in accordance to some economical regulations. All infants have their diaper changed at a certain time, they are bathed in a certain way, they are given a definite kind of food at a certain time, they are taken to their mothers for a definite time, and they must sleep during a certain period. This regimentation is justified on the assumption that all infants must be trained early in conformity to some recognized hygienic principles.

The routine procedures are carried out by a trained pediatric nurse with one or more assistant nurses, and, presumably, have been approved by the attending physician. When a pediatrician is in charge, I find that the obstetricians pay very little attention to the nursery. The usual orders are: "Let the baby be cared for under the usual hospital regulations." The problems of the nursery are left to the pediatrician.

The pediatricians are themselves responsible for this state of affairs. Did we not clamor for this task and responsibility? The baby, as soon as the cord is tied and he has been marked for identification and has had the prophylactic instillation of silver nitrate into the eyes, should be turned over to the pediatrician. That was the demand, and it seemed reasonable. In truth, the practice has had some compensations. We have thereby been enabled to study the newborn more intensively, and the enormous literature on this subject which has accumulated during the last twenty years gives ample evidence that the pediatricians are alert. Yet this very study has clearly revealed certain serious faults in the regimentation of newborn babies. These problems were discussed briefly in a recently published article. (Arch. Ped., Vol. 54, p. 617, 1937.) The principle conclusion of that study was, "The aggregation and regimentation of the newborn is dangerous."

For my purpose it is unnecessary to give statistics. Every pediatrician has witnessed epidemics of skin diseases in the nursery. In fact, impetigo may become a deadly scourge; but, as a rule, the hospital combats the infection with the usual antiseptics and sends the baby home. Most cases are cured after the baby arrives at home. The disease may become prevalent for a long period even in our best hospitals. If the hospital nursery technic is faulty or carelessly applied, impetigo becomes a permanent menace.

In order to prevent the skin lesions, a number of trials have been made to change the method of bathing, as the discard of the soap, the substitution of the spray bath, and finally bathing with an antiseptic oil. The latest recommendation is to give the baby an oil bath followed by a cleansing bath, and then omit bathing altogether for several days. It really does seem superfluous to bathe the baby every day, except the diaper region. A very popular practice is to cleanse the baby with antiseptic oil every day. It is often rubbed into the skin with the hands. I think this is a mistake. Sooner or later the hands will convey some pyogenic microorganisms. Even sponging the baby with oil has some objections, especially if the oil is mineral oil. Some of the pores of the skin become occluded with oil, rashes later on are inevitable, yet if no oil is applied the skin becomes too dry.

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*Read before the Tennessee State Medical Association, Nashville, April 12, 13, 14, 1938.

It is in the care of the diaper where most of this skin disease arises. The buttocks and genital region must be cleansed several times a day. The urea must be washed from the skin; the stool, consisting almost entirely of bacteria, must be removed promptly and the buttocks cleansed. Some method must be discovered to recognize that the baby has passed a stool. How frequently the newborn lies in its own fecal matter for an hour or more before it is changed! The routine rule to change the diaper before nursing and a half-hour after nursing is not enough. The mother in the home detects the soiled diaper at once, because the baby acts as if he were uncomfortable. In the hospital the soiled diaper is so frequently overlooked that many babies arrive at home with scalded buttocks and infected skin of the diaper region.

There is only one way to get rid of impetigo. Recognize the initial pustule at once, isolate the baby in another part of the hospital, and send him home as soon as possible. If the initial pustule is not detected at once, the task becomes formidable. Placing six to ten infected infants in one room becomes almost a scourge. All the infective lesions on a baby must be destroyed, but he is sure to get another infection from another baby in a short time. The aggregation and regimentation of a group of infants suffering from impetigo makes a disgusting mess.

However, the greatest danger lies in the transference of enterogenic bacteria from one baby to the other. Sooner or later every hospital has an epidemic of diarrhea among the babies. We recently had such epidemics in two different hospitals in St. Louis. I have witnessed at least a dozen such epidemics. When the toxic agent is severe and deaths occur, the hospital personnel becomes alarmed, but milder epidemics are passed over without much ado. We encounter so many newborn infants who arrive home from the hospital suffering from a diarrhea. (See Best, J. A. M. A., 110, 1155.) In the change of the diaper the intestinal bacteria are almost invariably conveyed from one infant to the other, and we have no way to recognize what stool contains pathogenic bacteria. I consider the accidental transmission of enterogenic bacteria as the greatest menace in the nursery. Thus is repeated the experience gathered in the foundling homes years ago.

To prevent these intestinal and skin infections a rigid aseptic technic has been devised, but I know of no hospital where this aseptic technic is not violated every day. Carrying out such a procedure is very expensive. As a model the technic used at the Cradle may be imitated. In brief, this procedure places every baby in a restricted area of his own, and a nurse waits on one baby completely, and before waiting on another baby changes her gown and scrubs and disinfects her hands and arms or rubber gloves are used. The attending nurse never touches the nipples on the bottle. This is an ideal technic, how many hospitals can adopt and carry out these regulations? (See Best, *loc. cit.*)

Experimentations in prelacteal feeding have really achieved very little. Pediatricians have attempted to check the great loss in weight during the first three days of life by feeding the baby artificially. Gradually it has dawned on some of us that foreign protein, even gelatin, given during this time must profoundly modify the metabolism of the newborn, and change the activity and development of the gastrointestinal tract. Is this metabolic change conducive to normal digestion of human milk? We have so many digestive disturbances in breast-fed infants who have been partially fed in the hospital.

As the signs of dehydration and acidosis were observed in some infants on the old starvation regime, it was proposed to feed all young infants on beta lactose and citrate of soda. If this mixture is given freely, the babies will not lose in weight; in fact, they may become edematous. In one of our hospitals, by mistake, a one per cent, instead of one-half per cent, solution of sodium citrate was administered regularly with the result that about a dozen cases of tetany were observed in a few months. Alkalinizing the young infant is dangerous. A relative acidosis and even dehydration is safer. The sodium citrate and milk sugar mixture should be reserved for some special cases. As a routine it is a failure, since the disadvantages and dangers are greater than the benefits. The old practice of giving sugar water to the newborn was discontinued many years ago because it predisposed to diarrhea. Any sugar administered to an infant who is getting a fair supply of colostrum rich in protein is almost certain to increase the fermentative processes in the intestine. Each infant must be individualized; regimentation is bound to end disastrously.

The greatest calamity in the care of the newborn in the hospital is the practical abolition of natural feeding. Breast feeding is getting less and less frequent. Placing the babies in the nursery under the care of a pediatrician does not favor breast feeding; the converse is true. The pediatrician knows nothing about the capabilities of the mother, and is not trained in the management of maternal nursing. The obstetrician has in mind only the comfort and health of the mother. He is not watching the baby. Whenever the breast milk becomes even slightly deficient, the baby gets the bottle. Soon the baby likes the bottle better, and the mother's milk dries up. I am one of the older practitioners who believes that the deterioration of the race starts with deficient maternal nursing. The baby who during the period of the first four or five months is fed on breast milk exclusively in the end will make the strongest individual. We can produce good bones and muscles by the modern method of artificial feeding, but can we produce such sound vascular and nervous growth? Leaving out for the moment the established fact that the breast-fed baby has a stronger resistance toward infections, the evidence is clear to me that imperfections in the growth of the nervous system and the resulting neuroses in childhood are more common in the child who has been artificially fed. Scientific studies along this line are needed.

The pediatricians' efforts to establish maternal nursing for babies born in the hospital have been lamentable failures. I am really discouraged.

Therefore, I want to make a new proposal for the care of the infant in the hospital. During the first ten days of life the baby should be under the care of the obstetrician and not the pediatrician. As long as the baby thrives on breast milk, let the child specialist stay out, but he should be consulted at once when the breast milk definitely fails.

The task is not so much the care of the baby; it is the establishment of the proper maternal attitude toward her offspring. It is the obstetrician's (or family physician's) duty to prepare the mother for the adequate performance of breast feeding. When this function becomes active after birth, it is the obstetrician's duty to watch the mother and the baby, and assist in adjusting the proper psychical and physical response from mother toward the child. When the baby lies in a bed in the nursery and is brought to the mother for fifteen minutes four or five times a day, the psychic stimulation of the mother by the baby is woefully inadequate. In these days of aggressive psychology, we may rationally inquire whether the grunting, moaning, crying, and wiggling baby in a crib beside the mother may not stimulate the mother, and her integrated response will be a greater flow of breast milk. Even the old masters declared that the secretion of milk is very much influenced by the emotions of the mother.

Judging from my studies of the hospital nursery, I venture to lay down this arrangement as ideal:

The obstetrical department of a hospital should be subdivided into separate rooms. Each room holds the mother and baby. The equipment for each room should be such as to provide for a full care of the inmates. The baby lies in a crib beside the mother's bed. In addition to the watchful care of the convalescing mother, a nurse visits the room regularly. A strict medical and surgical aseptic technic is thrown around each room. No bacteria from another room should be introduced into this unit, and no bacteria must be carried out. Every nurse before entering this room must scrub or disinfect her hands and arms and put on a clean gown, possibly wear a mask during the cold season, and wait on the mother and infant. Meanwhile the obstetrician has full charge, managing the mother so that she will be capable of supplying breast milk. Beside water nothing is given to the baby even if the loss in weight is marked. The baby preferably should have no rubber nipple to suck; he must nurse the breast only. Hunger and thirst will stimulate the baby to suck vigorously. When, however, the physician and mother have exhausted their resources, and on the fourth and fifth day the baby is still losing in weight, then the pediatrician should be consulted to prescribe an artificial food. Only by this method can we expect the best results in securing breast milk and preventing one baby from becoming infected by another baby.

This plan has one serious objection. The mother would be deprived of that perfect rest which makes the hospital so attractive. I fear such a plan would not become popular. To have her baby at her side day and night would usually interfere with the night's slumber. Our modern mothers insist on a painless labor and freedom from care and annoyance for ten days after delivery. They are not desirous of nursing their babies, or at least refuse to make much personal sacrifices to do so. One woman teaches another that bottle babies grow just as well and are less burdensome. They refuse to be drudges even for their own child. So the little baby gets a bottle a night because the obstetrician desires that his patient should not be disturbed. It is nice for the mother, but my sympathy goes out to the infant.

Since my ideal plan is not likely to be adopted, we must continue to do the best we can with the modern arrangement.

In conclusion, I offer certain suggestions as to the care of the infant in the modern hospital.

1. Hospitals should minimize the dangers of regimentation by a rational grouping of infants, each group being under special regulations. The following groups are suggested:

Group A. The newborn under five days old. After the removal of the vernix with sterile oil and the cleansing of contamination by blood or meconium, the babies are not bathed for a week. A daily light application of oil with a cotton or gauze sponge is permissible. These babies should remain under the care of the obstetrician, and it is his responsibility to establish normal lactation if possible. Meanwhile the baby should get no bottle, day or night, but must be taken to the mother regularly every four hours even at night. The baby should spend a lot of time with his mother.

Group B. Breast-fed babies over five days old. These should spend a lot of time daily with their mothers. Regular bathing commences.

Group C. Artificially-fed infants. The technic should be under strict aseptic care. They should receive a rational milk formula acidulated, as the feeding of acid milk is a safeguard against intestinal infections. Their diaper care is different than that of breast-fed infants.

Group D. The circumcised boys. The flesh wound of these infants is such a frequent source of skin infection to other infants. They must be isolated. (Remarks.)

2. The diaper region of all breast-fed babies should be washed with plain water and then the parts dried. If the diaper is soiled, the buttocks should be cleaned with soapy water, then with plain water and dried. Artificially-fed babies need a special washing to remove all the urea from the skin, else the ammoniacal fermentation of the urine becomes active. Sponging the diaper region at least once a day with a boric acid solution is helpful.

3. Some kind of disinfection for the nurse's hands before she passes from one infant to another is a safeguard.

4. In normal infants prelacteal feeding should be limited to plain water, and, I believe, this should preferably be given with a spoon.

5. Every infant should be individualized in regard to care and feeding. General rules for the care of all babies should be generally discarded. Regimentation should be minimized in every way possible. The obstetrician should decide the question of maternal fitness to continue breast feeding, exclusively or partially.

SPHENOPALATINE GANGLION NEURALGIA*

C. K. Lewis, M.D., Memphis

ALTHOUGH much has been written about the injection of alcohol into the sphenopalatine ganglion, the rhinologists are by no means agreed as to the value of this procedure in the treatment of pains about the face and head. There are those who have injected this ganglion with indifferent results; those who do not believe such a procedure is indicated; and still others who do not think the nasal ganglion responsible for the facial neuralgic syndrome as described by the late Dr. Greenfield Sluder. Into this latter group the neurological surgeons appear to be fairly well united.

It is not intended here to argue any of the above-mentioned points, to make any converts, or to try to persuade those who have an established technique for injecting the nasal ganglion that the method of approach used by us is any better, but only to report two cases which suffered from unilateral pains in the face and head of undetermined cause, that received relief from alcohol injected into the sphenopalatine ganglion. This condition is not to be confused with tic douloureux.

Sluder described the neuralgic syndrome as pain beginning at the root of the nose, in and about the eye, the upper jaw and teeth, sometimes the lower jaw and teeth, and extending backward to the temple and about the zygoma to the ear, emphasized at the mastoid, thence reaching backward by way of the occiput and neck; it may extend to the shoulder blade and shoulder and in severe attacks to the arm, forearm, hand, and even the finger tips.

I have never seen a case presenting all of these symptoms. The two I shall report had some of them, and appear to me to be unusual only in that they complained of supraorbital pain as well.

The sphenopalatine ganglion is located in the upper portion of the sphenomaxillary fossa, and in close proximity to the sphenopalatine foramen. This foramen is located at a point behind and slightly above the posterior tip of the middle turbinate. The ganglion, as a rule, lies close to the foramen, and, the latter being covered by the mucous membrane lining the nose, it is easily accessible from the nasal cavity. From this position it distributes branches to the orbit, posterior ethmoidal cells and sphenoid. Other branches given off, as it descends through the posterior palatine canal, go to the nasal fossa, sinuses, septum, and finally emerge at the posterior palatine foramen.

Under favorable conditions, a long needle curved at the tip can be passed over the superior border of the inferior turbinate to a point opposite the sphenopalatine foramen and the membrane punctured at this point. If, however, certain obstructions exist, such as a deviated suptum or a hypertrophied turbinated bone, it is necessary to use a straight needle and enter the sphenomaxillary fossa at a point just beneath and in front of the posterior tip of the middle turbinate. An application of ten per cent cocaine is first applied over the region to be injected. After about five minutes the needle is passed into the fossa and some ten minims of a solution consisting of five per cent phenol in ninety-five per cent absolute alcohol is injected.

L. H. K., white, male, forty-five years of age, was first seen by me at his home where he was confined to his bed because of severe pain in the left side of his forehead and in the orbit. He gave a history of having his first attack in 1907, and of recurrences at intervals of approximately every two years up until 1925. At this time, a glioma was removed from the left temporal lobe. After this, he was free from pain until 1930.

The duration of pain with each attack was about eight weeks. The pain would always occur after the patient had gone to sleep, and would last from two to six hours. Sometimes it would come on two nights in succession, or maybe every second night. When the pain would disappear there would be a watery discharge from the eye and left side of the nose.

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*Read before the Tennessee Academy of Ophthalmology and Otolaryngology, Knoxville, April 12, 1937.

At the time I saw him he was suffering intensely with pain on the left side of his forehead but the point of greatest intensity he said was in his left eye, as though a knife were being twisted around in it. I examined his nose, throat, and ears and had his sinuses X-rayed, but with negative findings. He previously had been examined for lues, but these tests were also negative. The following morning he reported that he felt better, except for a soreness over the left side of his head. The next night I was called to see the patient again at about the same time. On this occasion, I applied a cotton-covered applicator dipped in four per cent cocaine to the region of the sphenopalatine ganglion on the affected side. After repeating this a few times, the pain left his face, but not his forehead.

The patient shortly after this had the supraorbital nerve, with its branches, entirely removed. This relieved the supraorbital pain, but the pain in the orbit continued to recur as before.

Aften an injection of the phenol and alcohol solution in the nasal ganglion, the pain disappeared. I communicated with him off and on for five years thereafter, and when I last heard from him, the first part of this month, he had had no more attacks.

J. L., negro, male, thirty-five years of age, employed as a painter, came to the Outpatient Department of the University of Tennessee, School of Medicine, complaining of pain in the face and head. He stated that he had been troubled with this for the past five years during the winter months. The pains began in his left eye and radiated over the left frontal and parietal regions, over the cheek to the mastoid and down the neck. His appetite was good, but he was unable to sleep well because of the pain, and was compelled to stay up a large part of the night.

Past history was essentially negative. When first seen, we were struck by the appearance of the patient's head, the left side of which, over the frontal region, was shaved to the mid-line and the forehead, the bridge of the nose on that side, including the eyelid, had been painted with mercurochrome. Examination of the nose was negative. When an applicator dipped in ten per cent cocaine was placed over the region of the sphenopalatine ganglion the pain subsided completely in a few minutes. The man was sent into the Memphis General Hospital in March, 1932, where the ganglion was injected with alcohol and phenol by the intranasal route, using a curved needle and entering the sphenopalatine foramen. This was followed by increase of the pain and a marked systemic reaction. The next day he was free from pain and was discharged from the hospital.

The patient returned from time to time for this treatment to be repeated. He was last seen in December, 1935, complaining again of the same pain, for which he had been previously treated. At this time, an X-ray report showed "chronic pan sinusitis with evidence of active infection in all sinuses at the present." The patient was given another injection of phenol and alcohol, which afforded him complete relief, and he was instructed to return if further pain developed. Since he has not returned we naturally concluded that he is no longer suffering from the acute pain with which he previously complained.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee
Office of Publication, 508 Doctors Bldg., Nasbville, Tenn.

Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 15, 1932.

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H. H. SHOULDERS, M.D., Editor and Secretary

MAY, 1938

EDITORIAL

THE 1938 MEETING OF THE TENNESSEE STATE MEDICAL ASSOCIATION

On looking backward upon the one hundred and fifth annual meeting of the Tennessee State Medical Association, one can see much that is of interest, encouragement, and value.

Six hundred doctors registered their attendance. This is the largest registration at a meeting since the centennial meeting in 1930, which was the largest registration ever recorded up to that date.

While the registration was large and of itself an evidence of the keen interest of the doctors in the state in the affairs of organized medicine, there are other considerations of value and probably of more significance.

Twenty-nine scientific papers were read before the general session on a wide range of subjects.

Two important addresses were made at the night session; one by the president, Dr. George Williamson, which dealt with some historic phases of medical progress. Another important address was made by Dr. Irvin Abell, president-elect of the American Medical Association, which dealt with the present and the future of medicine.

The sectional meetings were well attended and had excellent programs.

The exhibits, both commercial and scientific, were of a high order.

The Woman's Auxiliary was well attended, and the attention of the auxiliary was devoted to matters of practical medical interest.

The House of Delegates considered many matters of importance. The business was conducted with frank and open discussion without wrangle. In fact, all actions were characterized by a remarkable degree of unanimity.

We doctors are confronted by many problems. First and foremost is the problem of keeping ourselves abreast of the times from the standpoint of scientific medicine. A major portion of the meeting was devoted to this subject.

Postgraduate work received all the emphasis it could receive.

None of the time of the association could properly be considered as devoted to the financial interest of doctors as a group or as individuals.

Owing to the conditions that obtain today, it is exceedingly important that doctors keep themselves informed concerning political and sociologic developments which affect or may affect the public welfare in general and the medical profession incidentally.

There never was a time in the history of the world when so many people, so poorly prepared to speak on medical questions, are speaking and receiving some attention.

Encouragement is to be found in the fact that there is evidence of a marked degree of solidarity in the medical profession of Tennessee.

The doctors whose daily task it is to deliver medical care to people in their homes and in hospitals are performing their tasks. Their comings and their goings are not heralded in the daily press as are the activities and notions of others. This lack of publicity may be responsible for the fact that some elements of the public are prone to entertain a false opinion of the relative importance of the doctors whose activities are not publicized.

Medicine is on the march. The march is forward. Progress is made every year. The people are getting good medical care. And if the solution of medical problems is left to those qualified to exercise a judgment, the people will have good medical care and their liberties both. This cannot

(Continued on page 198)

EAT.

DR. THOMAS RANDOLPH BARRY
President, Tennessee State Medical Association

The New President

Dr. Barry was born at Elmwood Farm, Sumner County, Tennessee, in 1887; the son of John Randolph Barry and Laura Alexander Barry.

He attended the public schools of Sumner County; Branham and Hughes Preparatory School at Spring Hill, Tennessee, and the Hawkins School in Gallatin.

He was graduated in medicine from Vanderbilt University Medical School in 1915.

He served an internship in Bellevue Hospital, New York City, in 1915 and 1916.

He was prison physician at Sing Sing in 1916 and 1917 until war was declared.

In April, 1917, he was commissioned first lieutenant in the medical corps of the United States Army and was assigned to duty in the Medical Officers Training School at Fort Oglethorpe, Georgia, where he spent the summer. He was then ordered to Camp Upton, New York, and placed in charge of Ambulance Company No. 306, attached to the Seventy-Seventh Division.

In 1918 he was promoted to captain in the medical corps and sailed from Portland, Maine, with the Seventy-Seventh Division for duty overseas.

In October, 1918, he was promoted to the rank of major and became regimental surgeon for the 307th Infantry in the Seventy-Seventh Division.

He did service on the following sectors with the American Expeditionary Forces—Vesle, Chateau-Thierry, Meuse, and Argonne. He was in Sedan when the Armistice was signed.

He was honorably discharged from the United States Army in 1919 and immediately began preparation for a career as a urologist.

He did work at Cornell University; at the New York Hospital, and at St. Luke's Hospital, New York City.

After completing this work he began the practice of urology in Knoxville in 1920 and has devoted himself to this specialty since.

He has been an active member of his local and state medical societies. He is also an active member of the following special societies: American College of Surgeons and the American Urological Society. He has also been certified by the American Board of Urology.

His personal qualities and his professional conduct merit for him the high esteem in which he is held by the profession of Tennessee as evidenced by his election to the high office he holds.

be said of the measures proposed by those who would dictate to patients and doctors.

DEATHS

Dr. E. B. Dickson, Coal Creek; University of Alabama School of Medicine, 1882; aged 83; died April 11.

Dr. Ross Anderson, Memphis; Queen's University, Kingston, 1931; aged 31; found dead, on May 3, with a bullet hole from an automatic in his body.

Dr. H. A. Hart, Memphis; National University of Arts and Sciences Medical Department, St. Louis, 1912; aged 54; died February 21.

Dr. J. Ilar Glover, Union City; Kentucky University Medical Department, Louisville, 1906; aged 57; died February 14.

NEWS NOTES AND COMMENTS

Officers of Sections

Tennessee State Pediatric Society

President----------------Dr. William Van Order
Chattanooga
Vice-president------------------Dr. J. C. Overall
Nashville
Secretary--------------------Dr. Kinsey M. Buck
Memphis

Tennessee Academy of Ophthalmology and Otolaryngology

President---------------------Dr. J. B. Stanford
Memphis
Vice-president-------------Dr. G. W. Burchfield
Maryville
Secretary-treasurer-----------Dr. W. D. Stinson
Memphis

In a recent letter from Dr. S. R. Miller he suggests that we call attention of the members to the fact that members of the association, other than those living in Davidson County, should bear in mind that they are entitled to charge on their income tax reports the legitimate expense they incurred in attending the state meeting.

The Medical School Seminar at the forty-first annual meeting of the Associated Harvard Clubs is to be held at the Palmer House, Chicago, on May 20, 21, and 22.

The seminar begins at 2:30 P. M. on Saturday, May 21. All the graduates of the university are invited to attend. A limited number of admission cards are available for non-Harvard men who are particularly interested in medical education. These may be obtained by writing to Willard O. Thompson, M.D., chairman of the Medical School Committee, 700 North Michigan Avenue, Chicago, Illinois.

The program consists largely of addresses by Dr. C. Sidney Burwell, Dr. A. Baird Hastings, Dr. Walter Bauer, Dr. Elliott C. Cutler, and discussion by Dr. Joseph T. Wearn. Luncheon addresses by Frederick Roy Martin and William Allen White.

Preventive medicine will be the keynote of the twenty-third annual meeting of the American Association of Industrial Physicians and Surgeons which will be held concurrently with the Midwest Conference on Occupational Diseases at the Palmer House in Chicago, June 6, 7, 8, 9, 1938.

For an advance copy of the program or for information on exhibits, address Mr. A. G. Park, 540 North Michigan Avenue, Chicago.

WOMAN'S AUXILIARY

President---------------Mrs. H. E. Christenberry
Knoxville
President-elect--------------Mrs. Matt B. Murfree
Murfreesboro
Press and Publicity---------Mrs. W. Frank Fessey
Nashville

Doctors' wives from every section of the state were in attendance at the eleventh annual meeting of the Woman's Auxiliary to the Tennessee State Medical Association which convened in Nashville April 12, 13, 14.

Social affairs, drives around the city and business meetings filled the days of delegates and other visiting physicians' wives, who attended.

Mrs. H. E. Christenberry
President

Featuring the opening day of the convention were two social functions. The luncheon for members of the Official Board at Hermitage Hotel with Mrs. W. T. Black, Memphis, state president, as hostess, and the reception at the home of Mrs. W. R. Cate at which a musical program was given. Davidson County Auxiliary members assisted in entertaining.

On Wednesday the general convention session was held and the program was carried out per schedule.

Featuring the morning meeting was an address brought by Dr. H. H. Shoulders. Dr. Shoulders was presented by Mrs. W. T. Black. And the election of officers for the coming year.

At the close of the luncheon honoring Mrs. Black, president, cars were at the club to carry visitors driving to see local gardens noted for their beauty.

The annual state dinner at Centennial Club Wednesday evening brought to a close the social affairs. At this time the following new officers and chairmen were introduced by the new president, Mrs. H. E. Christenberry:

President-elect__Mrs. M. B. Murfree, Murfreesboro
First Vice-President___Mrs. B. B. Cates, Knoxville
Second Vice-President_Mrs. H. B. Everett, Memphis
Third Vice-President________________________
______________Mrs. J. A. Scott, Murfreesboro
Recording Secretary__Mrs. Tom S. Sale, Memphis
Corresponding Secretary_Mrs. Jesse Hill, Knoxville
Historian____________Mrs. J. Cash King, Memphis
Treasurer______Mrs. John B. Shoun, Elizabethton

Directors

Mrs. W. S. Nash, Knoxville______________ 1 year
Mrs. C. C. Vinsant, Maryville____________ 2 years
Mrs. B. F. Byrd, Nashville______________ 2 years
Mrs. Theo Morford, Nashville____________ 1 year
Mrs. W. T. Black, Memphis______________ 2 years
Mrs. J. C. Ayres, Memphis______________ 1 year

Chairmen

Archives______Mrs. Fowler Hollabaugh, Nashville
Exhibit______________Mrs. Moore Moore, Memphis
Hygeia____________Mrs. H. B. Brackin, Nashville
Legislation__________Mrs. Y. W. Haley, Nashville
Organization___Mrs. M. B. Murfree, Murfreesboro
Parliamentarian____Mrs. Newton Stern, Memphis
Press and Publicity__Mrs. W. F. Fessey, Nashville
Program___________Mrs. R. G. Reaves, Knoxville
Public Relations______Mrs. W. T. Braun, Memphis
Research_____________Mrs. W. R. Cate, Nashville
Revisions______Mrs. W. R. Shearer, Tellico Plains

May we express our grateful appreciation to Mrs. Black and her retiring officers and chairmen for a year of fruitful service and happy fellowship and to Mrs. Christenberry and her corps of officers and chairmen we pledge the same loyal cooperation as was our privilege to extend Mrs. Black during the year that has been so successfully brought to a close.

MEDICAL SOCIETIES

Anderson County:

The Anderson County Medical Society met on April 4 in Clinton. The following paper was read:

"Drugs Used in the Treatment of Cardiac Disorders," by Dr. P. M. Dings.

Dr. A. J. Butler outlined treatment of syphilis as experienced by him, giving advantage and disadvantage of the use and technics of administration of the drugs used.

Campbell County:

The Campbell County Medical Society met in LaFollette April 28. The following were present: Drs. Joseph McCoin, J. P. Lindsey, G. B. Brown, A. A. Baird, J. F.

(Continued on page 202)

LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

President—Dr. Tom R. Barry, Knoxville.
Vice-President for West Tennessee—Dr. John Jackson, Dyer.
Vice-President for Middle Tennessee—Dr. W. S. Rude, Ridgetop.
Vice-President for East Tennessee—Dr. W. A. Garrott, Cleveland.
Secretary-Editor—Dr. H. H. Shoulders.
Assistant Secretary-Editor—Dr. W. M. Hardy.

TRUSTEES

Chairman and Treasurer—Dr. C. M. Hamilton, Doctors Building, Nashville.
Dr. A. F. Cooper, Goodwyn Institute Building, Memphis.
Dr. E. R. Zemp, Walnut Street, Knoxville.
Dr. Franklin B. Bogart, Medical Arts Building, Chattanooga.
Dr. George C. Williamson, Columbia.

COUNCILORS

First District—Dr. L. E. Dyer, Greeneville.
Second District—Dr. S. R. Miller, Knoxville.
Third District—Dr. Hiram A. Laws, Jr., Chattanooga.
Fourth District—Dr. J. T. Moore, Algood.
Fifth District—Dr. John W. Sutton, Petersburg.
Sixth District—Dr. H. S. Shoulders, Nashville.
Seventh District—Dr. C. D. Walton, Mt. Pleasant.
Eighth District—Dr. J. R. Thompson, Jackson.
Ninth District—Dr. E. H. Baird, Dyersburg.
Tenth District—Dr. W. B. Burns, Memphis.
Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

Delegates to the American Medical Association—
- Dr. E. G. Wood, Knoxville; East Tennessee.
- Dr. H. H. Shoulders, Nashville; Middle Tennessee.
- Dr. H. B. Everett, Memphis; West Tennessee.

Alternates—
- Dr. E. T. Newell, Chattanooga; East Tennessee.
- Dr. J. O. Manier, Nashville; Middle Tennessee.
- Dr. E. C. Ellett, Memphis; West Tennessee.

OFFICERS OF COUNTY MEDICAL SOCIETIES

County	President	Vice President	Secretary
Anderson	O. E. Ballou, Clinton	Geo. W. Kelly, Clinton	J. S. Hall, Clinton
Bedford	James N. Burch, Shelbyville	Price Womack, Shelbyville	W. H. Avery, Shelbyville
Blount	G. D. LeQuire, Maryville	W. C. Crowder, Maryville	J. Frank Manning, Maryville
Bradley	D. N. Arnold, Cleveland	C. H. Taylor, Cleveland	Madison S. Trewhitt, Cleveland
Campbell	J. L. Heffernan, Jellico	G. M. Rogers, LaFollette	R. J. Buckman, LaFollette
Carroll	O. W. Fesmire, Trezevant		J. H. Williams, McKenzie
Carter	A. R. Collins, Watauga Valley	H. P. Damron, Elizabethton	E. T. Pearson, Elizabethton
Chester, Henderson, Decatur	R. M. Conger, Decaturville		L. C. Smith, Henderson
Cocke	J. A. P. Shields, Hartford	W. C. Ruble, Drew A. Mims, Newport	W. E. McGaha, Newport
Cumberland	E. W. Mitchell Crossville		V. L. Lewis, Crossville
Davidson	W. B. Anderson, Nashville	M .S. Lewis Nashviiie	J. P. Gilbert, Nashville
Dickson	Hartwell Weaver, Dickson		R. P. Beasley, Dickson
Dyer, Lake, Crockett	J. O. McKinney, Friendship	J. E. Frazier, Newburn (Dyer) J. P. Moon, Tiptonville (Lake) W. H. Stallings, Friendship (Crockett)	C. L. Denton, Dyersburg
Fayette, Hardeman	F. K. West, Rossville		Wiley D. Lewis, Bolivar
Fentress	A. H. Crouch, Forbus		C. A. Collins, Wilder
Franklin	Geo. E. Bogart, Sherwood	Henry T. Kirby-Smith, Winchester	John M. Hardy, Sewanee
Gibson	John Jackson, Dyer	Robert Morris, Medina	E. P. Bowerman, Trenton
Giles	A. W. Deane, Pulaski	G. C. Grimes, Aspen Hill	J. U. Speer, Pulaski
Greene	Hal Henard, Greeneville	R. S. Cowles, Greeneville	I. E. Phillips, Greeneville
Grundy	O. H. Clements, Palmer	Wm. A. Brewer, Monteagle U. B. Bowden, Pelham	T. F. Taylor, Monteagle
Hamblen	R. A. Purvis, Morristown	D. J. Zimmerman, Morristown	D. R. Roach, Morristown
Hamilton	A. M. Patterson, Chattanooga	S. H. Long, Chattanooga	J. Marsh Frere, Chattanooga
Hardin, Lawrence, Lewis, Perry, Wayne	J. T. Keeton, Clifton	Henry N. Moore, Savannah (Hardin) Leo Harris, Lawrenceburg (Lawrence) Paul Wiley, Hohenwald (Lewis) W. E. Turner, Lobelville (Perry) D. L. Woods, Waynesboro (Wayne)	O. H. Williams, Savannah
Haywood	R. T. Keeton, Brownsville	G. G. Mulherin, Brownsville	Roy M. Lanier, Brownsville
Henry	A. F. Paschall, Puryear	Elroy Scruggs, Paris	R. Graham Fish, Paris
Hickman	Margaretta Bowers, Wrigley	E. C. Mulliniks, Centerville	W. K. Edwards, Centerville
Jackson			E. W. Draper, Gainesboro
Knox	Robt. F. Patterson, Knoxville	R. G. Waterhouse, Knoxville	Jesse C. Hill, Knoxville
Lauderdale	Joe B. Lacke , Ripley		Jas. L. Dunavant, Ripley
Lincoln	R. T. Odom, Fayetteville	W. S. Joplin, Petersburg	R. E. McCown, Fayetteville
Loudon	J. A. Leeper, Lenoir City	J. T. Mourfield, Lenoir City	J. R. Watkins, Loudon
Macon	D. D. Houser, Lafayette		J. Y. Freeman, Lafayette
Madison	Glenn D. Batten, Jackson	William K. Sullivan, Jackson	S. M. Herron, Jackson
Maury	Leon Ward, Mt. Pleasant	H. O. Anderson, Mt. Pleasant	D. B. Andrews, Columbia
McMinn	Boyd McClary, Etowah	C. O. Foree, Athens	D. F. Seay, Englewood
McNairy	E. M. Smith, Selmer	J. R. Smith, Selmer	T. N. Humphrey, Selmer
Monroe	R. C. Kimbrough, Madisonville		David M. Cowgill, Madisonville
Montgomery	M. L. Shelby, Clarksville	Philip L. Lyle, Clarksville	V. H. Griffin, Clarksville
Obion			D. S. Latimer, Union City
Overton	W. M. Breeding, Livingston		A. B. Qualls, Livingston
Polk	Thos. J. Hicks, Copperhill	W. Y. Gilliam, Copperhill	F. O. Geisler, Isabella
Putnam	R. L. Witherington, Cookeville	T. M. Crain, Monterey	Thurman Shipley, Cookeville
Roane	O. H. Coleman, Kingston	F. A. Neergaard, Harriman	J. C. Fly, Kingston
Robertson	W. P. Stone, Springfield	J. W. Wilkison, Springfield	W. F. Fyke, Springfield
Rutherford	John F. Cason, Murfreesboro	R. C. Van Hook, Auburntown	J. A. Scott, Murfreesboro
Scott	D. T. Chambers, Norma	T. L. Phillips, Oneida	Milford Thompson, Oneida
Sevier	R. F. Thomas, Sevierville	R. J. Ingle, Sevierville	H. A. Sauberli, Sevierville
Shelby	J. J. Hobson, President, Memphis J. H. Francis, Pres.-Elect, Memphis	W. C. Colbert, Memphis	A. F. Cooper, Secretary, Memphis E. G. Kelly, Treasurer, Memphis
Smith	A. O. Parker, Brush Creek	W. F. Boze, Carthage	Thayer S. Wilson, Gordonsville
Sullivan, Johnson	L. C. Cox, Kingsport	T. R. Bowers, Bristol (Sullivan) E. Bruce Rhea, Shouns (Johnson)	C. F. N. Schram, Kingsport
Sumner	C. D. Robbins, Gallatin	C. H. Donoho, Portland	W. M. Dedman, Gallatin
Tipton	A. J. Roby, Covington	J. J. Fleming, Atoka	H. C. Currie, Covington
Unicoi	H. L. Monroe, Erwin	R. H. Harvey, Erwin	J. J. Wright, Erwin
*Warren	John S. Harris, McMinnville	E. L. Mooneyham, Rock Island	John T. Mason, McMinnville
Washington	H. B. Cupp, Mountain Home	Walter Hankins, Johnson City	Carroll H. Long, Johnson City
Weakley	J. A. Moore, Sharon	M. D. Ingram, Dresden	T. B. Wingo, Martin
White	E. T. Tubb, Sparta		A. F. Richards, Sparta
Williamson	W. F. Roth, Jr., Franklin	B. T. Nolen, Franklin	K. S. Howlett, Franklin
Wilson	J. S. Campbell, Lebanon	R. N. Buchanan, Jr., Lebanon	R. B. Gaston, Lebanon

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* 1937 Officers.

COMMITTEES*

The following is a list of the standing committees of the Tennessee State Medical Association provided for in the constitution and by-laws and appointed by the proper authority, together with some special committees appointed under the authority of a resolution by the House of Delegates.

Some of the committees are appointed for a definite period. In such instances the appointment of the committeeman expires with the meeting of the House of Delegates in the year stated opposite his name.

COMMITTEE ON SCIENTIFIC WORK

Dr. H. H. Shoulders, Chairman, Nashville.
Dr. A. F. Cooper, Memphis.
Dr. Frank Harris, Chattanooga.
Dr. A. H. Lancaster, Knoxville.

STATE TUBERCULOSIS COMMITTEE

Dr. W. S. Rude, Chairman, Ridgetop.
Dr. O. N. Bryan, Nashville.
Dr. C. M. Oberschmidt, Memphis.
Dr. J. L. Hamilton, Chattanooga.

HOSPITAL COMMITTEE

Dr. D. R. Pickens, Chairman, Nashville.
Dr. E. H. Baird, Dyersburg.
Dr. E. A. Gilbert, Chattanooga.
Dr. E. G. Wood, Knoxville.
Dr. H. B. Everett, Memphis.
Dr. Lee K. Gibson, Johnson City.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION

Dr. L. W. Edwards, Chairman, Nashville (1939).
Dr. E. W. Cocke, Memphis (1941).
Dr. Battle Malone, Memphis (1940).
Dr. Tom Barry, Knoxville (1938).
Dr. T. R. Ray, Shelbyville (1942).

LIAISON COMMITTEE

Dr. W. C. Dixon, Chairman, Nashville (1941).
Dr. W. P. Wood, Knoxville (1940).
Dr. Hiram A. Laws, Chattanooga (1939).
Dr. Tom Mitchell, Memphis (1938).
Dr. Tom R. Barry, Knoxville (1942).

COMMITTEE ON INSURANCE

Dr. A. F. Cooper, Chairman, Memphis.
Dr. C. M. Hamilton, Nashville.
Dr. S. R. Miller, Knoxville.

COMMITTEE ON MEDICAL DEFENSE

Dr. S. R. Miller, Chairman, Knoxville.
Dr. H. B. Everett, Memphis.
Dr. H. M. Tigert, Nashville.

ADVISORY COMMITTEE TO THE WOMAN'S AUXILIARY

Dr. B. F. Byrd, Chairman, Nashville.
Dr. Oliver Hill, Knoxville.
Dr. Percy Wood, Memphis.

COMMITTEE ON EDUCATION

Dr. J. Marsh Frere, Chairman, Chattanooga (1940).
Dr. R. B. Wood, Knoxville (1938).
Dr. D. W. Smith, Nashville (1940).
Dr. H. B. Gotten, Memphis (1938).
Dr. W. O. Baird, Henderson (1939).
Dr. J. M. Lee, Nashville (1939).

COMMITTEE ON MEMOIRS

Not filled.
Dr. H. Quigg Fletcher, Chattanooga.
Dr. E. L. Ellis, Maryville.
Dr. L. J. Lindsey, Covington.
Dr. B. T. Nolen, Franklin.

COMMITTEE ON MATERNAL WELFARE

Dr. J. R. Reinberger, Chairman, Memphis.
Dr. M. S. Lewis, Nashville.
Dr. H. P. Hewitt, Chattanooga.
Dr. Andrew Smith, Knoxville.
Dr. C. W. Friberg, Johnson City.
Dr. L. C. Harris, Lawrenceburg.
Dr. D. T. Holland, Newbern.
Dr. J. E. Powers, Jackson.

COMMITTEE ON CHILD WELFARE

Dr. W. D. Anderson, Chairman, Chattanooga.
Dr. Oliver Hill, Knoxville.
Dr. Frazier Binns, Nashville.
Dr. W. D. Mims, Memphis.

CANCER COMMITTEE

Dr. Ralph Monger, Chairman, Knoxville.
Dr. S. J. Sullivan, Cleveland.
Dr. Howard King, Nashville.
Dr. H. S. Shoulders, Nashville.
Dr. J. W. McClaran, Jackson.
Dr. Frank Smythe, Memphis.

COMMITTEE ON PHYSICAL THERAPY

Dr. R. W. Billington, Chairman, Nashville.
Dr. A. M. Patterson, Chattanooga.
Dr. Robert Patterson, Knoxville.
Dr. A. H. Meyer, Memphis.
Dr. J. F. Hamilton, Memphis.

COMMITTEE ON POSTGRADUATE INSTRUCTION IN OBSTETRICS

Dr. John M. Lee, Chairman, Nashville.
Dr. Franklin B. Bogart, Chattanooga.
Dr. O. W. Hyman, Memphis.
Dr. Jas. R. Reinberger, Memphis.
Dr. J. O. Manier, Nashville.
Dr. W. L. Williamson, Memphis.
Dr. John B. Youmans, Nashville.

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*New committeemen for vacancies due to occur have not been appointed.

Slemons, U. S. Carden, J. W. Presley, J. L. Heffernan, Charles Rogers, G. M. Rogers, M. L. Davis, and R. J. Buckman.

Mr. F. W. Kibler, field director of the postgraduate committee on instruction in obstetrics, was present at this meeting and outlined plans and completed arrangements for the course to be conducted in this county in the latter part of June by Dr. Whitacre.

Dr. J. F. Slemons gave a paper on the timely subject, "Infant Diarrhea." The paper was very interesting and instructive, and was freely discussed.

(*Signed*) R. J. BUCKMAN, M.D.,
Secretary.

Davidson County:

April 19: "New Development in the Diagnosis and Treatment of Myasthenia Gravis," by Dr. S. S. Riven. Discussed by Dr. Ann Minot.

"Case Report: Gastro-Jejuno Colic Fistula," by Dr. W. C. Dixon. Discussed by Dr. H. M. Tigert.

April 26: "Surgery of the Gall Bladder," by Dr. Barney Brooks. Discussed by Dr. W. D. Haggard.

May 3: "Fractures of the Small Bones of the Hand," by Dr. Duncan Eve. Discussed by Dr. Robert R. Brown.

Dyer, Lake, and Crockett Counties:

The Dyer, Lake, and Crockett Counties Medical Society met in regular monthly session May 4, 1938.

Scientific program:

1. "Maternal Welfare and the State Program," Dr. James R. Reinberger, Memphis; Dr. DeWitt Holland, Newbern.
2. "The So-called Functional Disturbances," Dr. B. F. Turner, Memphis.
3. "Serum Treatment of Lobar Pneumonia," Dr. Henry B. Gotten, Memphis.

The next meeting will be held on Reelfoot Lake Wednesday, June 1. The scientific program beginning at 2 P. M. At 6:45 there will be a fish and fried chicken dinner. Those interested in the mixture of science and fun notify the secretary to reserve you a plate.

C. L. DENTON, *Secretary.*

Fayette-Hardeman Counties:

April 22: Dr. John Powers, Jackson, "Maternal Welfare Program."

Dr. John B. Nuckolls, Jackson, "Urinary Infections."

Greene County:

The Greene County Medical and Dental Societies met in their annual joint meeting at the Andrew Johnson Clubhouse on Tuesday, April 5.

Dr. Frank G. Yost presented a paper on "Local Anesthesia by Hypodermic Injection."

Dr. L. E. Coolidge presented a paper on "Focal Infection in Relation to Systemic Disease."

The following dentists and physicians were present: Drs. J. C. Self, F. G. Mathes, J. C. McGuffin, H. J. Lamons, F. G. Yost, I. E. Broyles, and Drs. H. W. Fox, C. P. Fox, W. T. Mathes, Hal Henard, S. T. Brumley, C. B. Laughlin, I. E. Phillips, M. A. Blanton, R. B. Gibson, J. T. Campbell, L. E. Dyer, N. H. Crews, C. P. Fox, Jr., L. E. Coolidge, and H. B. Anderson.

I. E. PHILLIPS, *Secretary.*

The Greene County Medical Society met at the Andrew Johnson Club Tuesday, May 3, at 6:30 P. M.

Dr. R. B. Gibson presented a paper on "Infections of the Urinary Tract and Urinary Antiseptics."

The following members were present: Drs. M. A. Blanton, R. B. Gibson, C. B. Laughlin, R. S. Cowles, L. E. Coolidge, H. W. Fox, Hal Henard, L. E. Dyer, I. E. Phillips, W. T. Mathes, and H. B. Anderson.

I. E. PHILLIPS, *Secretary.*

Hamilton County:

April 21: "Mental Hygiene," by Dr. J. C. Eldridge. "Mental Hygiene of Childhood," by Dr. W. E. Van Order.

April 28: "Treatment of Empyema-tithal Irrigation," by Dr. Gene H. Kistler. "Surgical Repair Injection Treatment of Hernia," by Dr. D. B. Karr.

May 5: Symposium on Tuberculosis at

Pine Breeze Sanatorium, by staff of Pine Breeze Sanatorium.

May 12: "Use of Sulfanilamide in Children," by Dr. J. C. Wright. "Weak Pronated Flat Feet," by Dr. O. L. Von Canon.

Hardin, Lawrence, Lewis, Perry, and Wayne Counties:

The Five-County Medical Society met April 26 in Waynesboro. The following papers were read:

"Coronary Heart Disease," by Dr. W. E. Turner, Lobelville.

"Maternal Welfare," by Dr. Leo Harris, Lawrenceburg.

"Pneumothorax in Pulmonary Tuberculosis," by Dr. T. J. Stockard, Lawrenceburg.

Knox County:

April 19: "Surgical Treatment of Pulmonary Tuberculosis," by Dr. Robert H. Baker.

April 26: "The Treatment of Syphilis Complicated with Pregnancy," by Dr. Frank Faulkner. Discussed by Drs. Jenkins, McIlwaine, and Smoot.

May 3: "Pros and Cons in the Repair of Old Lacerations at the Time of Subsequent Delivery," by Dr. Richard McIlwaine. Discussed by Drs. Stone, McLain, Smither, and E. G. Wood.

Washington County:

The Washington County Medical Society met on April 16 in Johnson City.

Dr. Walter E. Dandy of Johns Hopkins University was the guest speaker of the society.

OTHER MEDICAL SOCIETIES

MEDICAL MEETINGS

The West Tennessee Medical Society will meet in Jackson on May 26.

The Middle Tennessee Medical Society will meet in Goodlettsville on May 19 and 20.

The East Tennessee Medical Society will meet in Clinton on October 4.

The Five-County Medical Society, composed of Putnam, Cumberland, Jackson, Overton, and White Counties, will meet May 19, at 7 P. M. at the Shamrock Hotel, Gainesboro.

The Tennessee Valley Postgraduate Medical Assembly will hold their meeting in Knoxville June 22, 23, 24, 1938.

VANDERBILT MEDICAL SOCIETY, APRIL 6, 1938

1. *"A Case of Orthostatic Hypotension," by Dr. Marvin Corlette.*

The case presented was that of a forty-five-year-old white farmer, incapacitated for a year by the complaints of weakness, dizziness, and blurring of vision which came on when he assumed the erect posture. Nocturia, failure to sweat, and a loss of libido had been less impressive symptoms. Examination revealed a striking fall in blood pressure when he stood erect and syncope usually ensued in two to three minutes. Otherwise the general physical and neurological examinations were unrevealing. With the use of ephedrine (0.03 grams three times daily) and tight leg bandages he showed dramatic subjective and objective improvement. Such a regime restored him to almost his normal level of activities. He was presented as the first definite case of orthostatic hypotension which has been recognized in this clinic.

The case was discussed by Drs. W. E. Garrey, Sam Clark, John Youmans, Paul Lamson, and T. R. Harrison.

2. *"Placental and Mammary Transmission of Vitamin E," Dr. Karl E. Mason and Mr. W. L. Bryan.*

Breeding rats receiving from twenty to 500 times the minimal requirement of vitamin E are unable to transmit sufficient vitamin E through the placenta and mammary gland to prevent sterility in the first pregnancy of female offspring maintained upon E-deficient diets from the time of weaning. Male offspring show a delay of from three to five weeks in the time of appearance of testicular damage, depending upon the level of vitamin E intake of the mother. Like that of other fat-soluble vitamins, the placental and mammary transfer is exceedingly limited. The value of these observations in the improvement and standardization of methods for the bio-assay of vitamin E is emphasized.

The paper was presented by Dr. Mason and was discussed by Drs. John Youmans and C. S. Robinson.

3. *"The Attenuation of Biological Products by Interfacial Adsorption," by Dr. J. M. Johlin.*

After a brief introduction to the peculiar nature of adsorption phenomena as they apply to biological solutions, data were presented to illustrate the changes brought about in various biological solutions by the catalytic action of interfacial concentration and orientation when such solutions are emulsified with chloroform.

A completed clotting mechanism is established in the non-clotting plasmas of fish and birds by interfacial adsorption.

Insulin is rendered insoluble and has a diminished but prolonged action. Ricin is completely detoxified but retains antigenic properties for immunization as demonstrated with rabbits. Tetanus toxin (Lederle), containing 709,000 M. L. D.'s per cc., is also completely detoxified but remains antigenic. The hemolytic, dermonecrotic, and lethal actions of staphylococcus toxin (Lederle) are completely destroyed by adsorption without the elimination of the antigenic property of the toxin solutions.

The dermonecrotic and lethal actions of moccasin venom are entirely destroyed while its antigenic action is retained. This method of attenuation appears to be applicable to protein solutions generally.

The paper was discussed by Drs. R. H. Rigdon and Roy Avery.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Building, Nashville

Pulmonary Complications after Cyclopropane. Burford. Journal A. M. A., April 2, 1938.

Numerous investigators and commentators have reported and called attention to the low incidence of pulmonary complications following the administration of cyclopropane. However, the author was able to find in a series of 1,333 administrations of cyclopropane thirteen cases of pulmonary complications, which represented 0.97 per cent. The entire thirteen cases occurred among the 626 abdominal operations. Seven hundred and seven extraabdominal cases were free from any such complications.

The factors concerned in the production of postoperative pulmonary complications not only after cyclopropane but all other inhalation anesthetics are the anesthetic itself, the technique, the site of the operation, duration, sex, age, preoperative condition, and depth of anesthesia. Abdominal operations necessitate a greater degree of depth. Anesthesia in these thirteen cases averaged one hour and thirty-eight minutes, only one being less than an hour.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

Leukoplakia Buccalis. F. J. Eichenlaub, M.D., Washington, D. C. Archives of Dermatology and Syphilology, April, 1938.

This study is based on 327 cases of leukoplakia among 16,802 veterans (1.9 per cent) examined at the Veterans Administration Facility at Washington, D. C. The group was made up almost exclusively of men, and less than five per cent of them were negroes. Their ages averaged about forty years.

Of the 327 patients, 276, or 83.79 per cent, used tobacco. Forty-eight smoked pipes; eighteen smoked cigars; seven chewed tobacco, and 203 smoked cigarets. Five patients did not use tobacco in any form.

Among the 327 patients with leukoplakia thirty-three, or ten per cent, had syphilis. An additional 9.57 per cent probably had syphilis, thus, leaving practically eighty per cent without any evidence of syphilis. On this basis the author is convinced that syphilis plays a minor role in the causation of leukoplakia. It is more frequently associated with leukoplakia of the tongue.

There were 2,408 cases of tuberculosis among the 16,802 veterans. In the group with leukoplakia thirty-nine patients, or 11.92 per cent, had tuberculosis. Thus, he considers that tuberculosis is not a causative factor.

The condition of the mouth and teeth is a naturally possible factor in the production of leukoplakia. Of the group of 327 patients there was noted to be 896 dental deficiencies of various kinds. He considers focal infection of the nose, throat, and respiratory tract to play a part in the causation of leukoplakia.

OBSTETRICS AND GYNECOLOGY

By Hamilton V. Gayden, M.D.
Suite 234 Doctors Building, Nashville

Treatment of Vesicovaginal Fistulae. Cameron Duncan, Am. J. of Obs. and Gyn., 35:513, March, 1938.

Vesicovaginal fistula is of infrequent occurrence at the present time. Phaneuf estimates that it occurs once in ten thousand gynecologic and obstetric cases. The small number of cases treated by any one clinician makes it hard to arrive at definite conclusions and a perfect operative technique, and the operative treatment is so frequently unsuccessful that a consideration of the handling of this distressing condition may not be out of place.

When the fistula is small and the bladder can be distended with fluid, cystoscopy can be done without any difficulty. To overcome difficulty in cystoscopy with large fistulae the author infiltrated the vaginal introitus with one per cent procaine solution and sutured the vagina water-tight. Cystoscopy should precede operation, the ureters catheterized and kidney function tests done. After hysterectomy or irradiation most fistulae are in close proximity to the ureteral openings. The bladder wall is far more elastic than the vaginal wall and contains so much muscular and elastic tissue that the scar tissue in vesicovaginal fistulae is mostly confined to the vaginal wall.

Free mobilization of the bladder from the vagina is essential. After thorough repair of the bladder wall, the method of closing the vaginal skin is unimportant. Complete or partial colpectomy is applicable to large fistulae. Mechanical abrasions should be tried in small fistulae before resorting to operation. Suprapubic bladder drainage is advisable in patients who have had repeated operations or where the fistula is near the bladder neck.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

The Status of Corneal Transplantation and Personal Experiences with It. M. Amenabar Prieto. American Journal of Ophthalmology, April, 1938.

The Castroviejo method of transplantation is considered by the writer the most promising, after some sixty transplantations in rabbits and five attempts in human beings. A report on rabbit eyes, sectioned in order to study the hitherto neglected process of cicatrization, is reserved for later publication. The five human cases have been observed from eight to ten months. All the transplants have been retained, none entirely transparent, but none entirely opaque. Vision has improved in all. All the cases had unilateral leucomata. The author believes however that the operation should be reserved for patients with bilateral leucomata, in whom even a slight improvement in the vision of one eye is an important advantage. The author uses only two vertical and two horizontal intracorneal sutures, instead of the more numerous sutures Castroviejo employs to keep the graft in place; and two fixation sutures in the two vertical recti, instead of a blepharostat, to keep the lids away and immobilize the globe during the operation.

ROENTGENOLOGY

By Franklin B. Bogart, M.D.
Medical Arts Building, Chattanooga

Irradiation Sickness. Charles L. Martin, E.E., M.D., F.A.C.R., and Walter H. Moursund, Jr., A.B., M.D., Dallas, Texas, Radiological Department, Baylor Medical School. Radiology, Vol. 30, No. 3, p. 277.

Numerous causes have been suggested for anorexia, malaise, nausea, and vomiting, frequently occurring during roentgen or radium treatments. The wide variety of causes assigned as the cause of this condition, and the great number of suggested remedies, shows that none of them have solved the problem. Some of the substances that have been recommended are intravenous saline solution (isotonic to ten per cent), intravenous glucose solution (five to twenty-five per cent), sodium chloride, calcium chloride, afenil, colsil, vasano, nautisan, permesin, ephetonin, sympatal, cardiazol-ephedrine, insulin, hypophyseal and suprarenal extracts, a resistant strain of colon bacilli, magnesium hyposulphite, intravenous magnesium thiosulphate, intramuscular liver extract, and nembutal.

The paper is limited to a consideration of "true irradiation sickness" and does not include "toxic sickness," which results from destruction of large masses of tumor tissue, or "psychic sickness," which the patient associates with odors of the radiological department.

In the opinion of the authors, true irradiation sickness results only when some part of the abdomen or the parotid glands are irradiated. They became convinced many years ago that true irradiation sickness was in most instances produced by interference with intestinal physiology, and they have searched for remedies capable of counteracting functional disturbances of the intestinal tract. Drugs capable of depressing the vomiting center were tried. Chloral hydrate, the bromides, and the many forms of the barbiturates were tried. Many of them gave temporary relief. The barbiturates are contraindicated in liver disease. Intravenous salve or glucose is useful in extreme cases.

Vitamin B has been investigated by the authors, both experimentally and clinically, and found to be very useful. The preparations used were Ryzamin-B (Burroughs-Wellcome), Betaxin (Winthrop), and Vitamin B (Abbott and Company). They give the vitamin for two days preceding the treatment and use daily doses of 2,000 international units, having found smaller dose insufficient.

The routine used is as follows:

1. A high carbohydrate diet.
2. Vitamin B, 2,000 I. U. daily by mouth beginning two days before the irradiation is started.
3. If vomiting occurs, give vitamin B, 2,000 I. U., intramuscularly at once.
4. If relief does not occur within thirty minutes, give sodium amytal, grain six, or an equal amount of another soluble barbituric acid derivative by rectum, or insert a nembutal suppository.
5. If vomiting persists, give one liter or five per cent glucose in normal salt solution intravenously, and repeat if necessary.

We have not found it necessary to give intravenous glucose to any of the patients treated with vitamin B. As a rule, this medication is needed only when some serious complication such as partial intestinal obstruction or abdominal infection is present.

SUMMARY

1. Barbiturates and intravenous saline and glucose solutions have a definite palliative effect on irradiation sickness.
2. Vitamin B given in large doses often prevents all the symptoms and seems to have a more specific effect.

SURGERY—GENERAL AND ABDOMINAL

By Battle Malone, II, M.D.
1400 Monroe Avenue, Memphis

Care of Diabetic Extremity Lesions. Thomas J. O'Kane, M.D., Frederick W. Williams, M.D. Surg. Clinics of N. Am., April, 1938.

In the Morrisania City Hospital a medical attendant was appointed in 1932 to care for all surgical diabetics. Also a team of three men was formed to handle the surgical side, and as a consequence the mortality rate was reduced from a previous forty-eight per cent to eighteen per cent. From a close study of such cases, certain principles and concepts were evolved which divided the cases into three groups: (1) purely vascular lesions, (2) purely infectious lesions, and (3) mixed lesions.

In group one the diabetes is comparatively mild and the arteriosclerosis is the principal factor. When the lesions occur only on the toes and only small areas are involved, rest in bed is prescribed along with general and local measures to improve circulation of the extremity. The lesion often takes a number of weeks to heal, but eventually separates itself from the healthy tissue. If dry gangrene involves a part or all of one or more toes, the same conservative treatment is carried out, watching carefully for signs of infection. With complete demarkation the toe may fall off or may be gently picked off. If gangrene involves an area above the toes or the whole foot, early amputation is advocated.

In group two, where there is no vascular impairment, diabetic control is instituted, and since the spread of infection in this type of patient is very rapid, decision as to surgical interference must be made quickly. Minor lesions such as paronychia should be drained adequately. In the foot infections extend rapidly along fascial planes and tendon sheaths. Usually local surgery, *i. e.*, drainage, will suffice; but rarely, if extensive and deep infection is present in the foot or leg and septicemia is impending or present, a major amputation may be necessary to stop the spread. Wound cultures should always be taken.

In group three, where the vascular changes are mild, gangrene rarely occurs. Here conservative surgery is indicated if the circulatory status is properly evaluated. When moderately advanced circulatory changes with infection are present, there is gangrene usually of the deeper tissues, while the superficial structures present only the signs of a spreading infection. If there is sudden progress of the lesion immediate amputation should be done. On the other hand, where infection is superimposed on the vascular lesion, infection progresses rapidly. These cases are emergencies, and immediate amputation is the proper treatment.

Various criteria for determining into what group a case falls are discussed, and these are largely clinical signs such as age, duration of diabetes, kidney function, history, etc. Character and extent of the gangrene is important.

Avoidance of infection, preservation of circulation, and avoidance of trauma should always be kept in mind in handling these cases. In regard to prophylaxis of foot lesions the authors give the following etiological factors: (1) inefficient foot prophylaxis, (2) static foot changes causing stress and trauma in unaccustomed places, (3) self-pedicure or ill-advised chiropody, (4) foot deformities.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.
By G. A. Williamson, Jr., M.D.
Medical Building, Knoxville

A Clinical and Experimental Study of the Effect of Pancreatic Tissue Extract on the Ureters. Grayson

Carroll and Frank G. Zingale. So. Med. Jour., March, 1938.

Pancreatic tissue extract was first used for ureteral spasm by J. A. Lazarus of New York, who made his report in 1936. The extract is the residual solution after insulin has been precipitated from the pancreatic tissue, although its true nature is unknown. It acts as a vasodilator in angina pectoris, and has the same antispasmodic effect on the bile ducts and intestinal spasms as on the ureter.

The action of the extract on the human ureter was determined by the hydrophorograph, with a number seven whistle-tip catheter inserted in the middle third of the ureter. The normal ureteral contractions were observed, the drug injected intramuscularly, and the effect observed. The usual dose is two to four cubic centimeters, repeating the second two cubic centimeters in five to ten minutes after the first, if necessary, as its action is not definitely constant.

It was found that pancreatic extract definitely relaxes the ureter within three minutes after the injection. Its effect, in most instances, is permanent clinically, although experimentally normal contraction returns. There is pain at the site of the injection, which lasts only a minute, but no untoward general effects. In two cases only were any general reactions noted. In these there was blanching of the face, faintness, and dizziness appearing immediately upon injection, and lasting only a minute or so.

The drug is effective in renal colic, due to calculi, stricture, kink, and spasm; also in post-cystoscopic colic.

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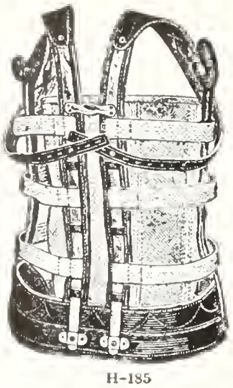

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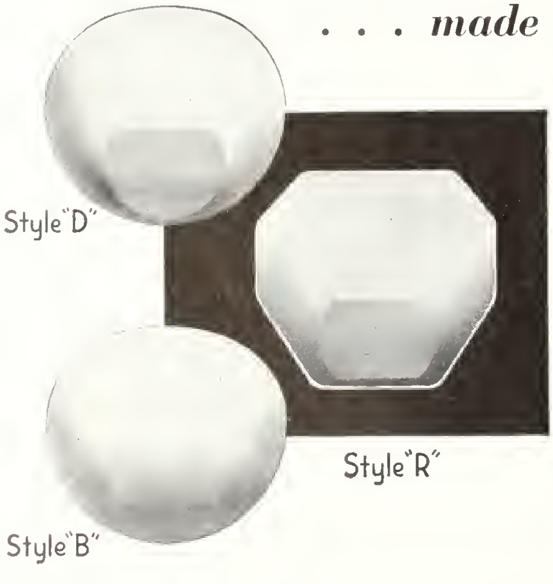

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THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
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ISSUED MONTHLY, Under Direction of the Trustees

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OFFICE OF PUBLICATION, 508 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXXI June, 1938 No. 6

MECKEL'S DIVERTICULUM WITH REPORT OF FIVE CASES

BARTON MCSWAIN, M.D.,* Paris

EMBRYOLOGY. — This anomaly was first accurately described in 1808 by the German anatomist, Johann Friedrich Meckel, as part of the ductus mesentericus which had not undergone the usual regressive process. The yolk sac[1] is situated on the ventral aspect of the embryo; it is lined by entoderm, outside of which is a layer of mesoderm. It is filled with fluid, the vitelline fluid, which possibly may be utilized for the nourishment of the embryo in the early stages of its existence. Blood is conveyed to the wall of the sac by the primitive aortae and after circulating through a wide-meshed capillary plexus is returned by the vitelline veins to the tubular heart of the embryo. At the end of the fourth week, the yolk sac presents the appearance of a pear-shaped vesicle, the umbilical vesicle, opening into the digestive tube by a long narrow tube, the vitelline duct. As a rule, the duct undergoes complete obliteration during the seventh week, but in some instances its proximal part persists as a diverticulum from the small intestine, Meckel's diverticulum.

Incidence.—Gray's Anatomy states that it persists in three per cent. Richardson[2] gives an incidence of 1.5 per cent. Hiller and Bernard[3] state that in 5,768 autopsies at the Babies' Hospital in Milwaukee sixty-three cases were seen, an incidence of 1.1 per cent; 74.6 per cent were in males. Schullinger and Stout[4] state that the incidence is 2.3 per cent of autopsies, being probably four times as frequent in the male, though other authors give it as low as two to one and as high as six to one. They state that it is rare to find two or more cases in the same family.

Anatomy.—It is located from four centimeters to four meters from the ileocecal valve, usually from thirty to ninety centimeters.[5] Shannon[6] states that, according to Fitz, in the newborn it lies twelve inches above the ileocecal valve, while in the adult this is increased to three feet. Hiller and Bernard[3] found diverticula from six to thirty-six inches from the cecum, averaging twenty and one-eighth inches in children under eighty-eight weeks of age.

These authors classify the lesions under three types according to the extent of communication with the umbilicus:

1. A patent tube connecting the ileum with the outside, through the umbilicus, manifested by a fistula, epithelium lined, which may or may not discharge feces.

2. Terminating as a fibrous cord to the umbilicus. There may be a mucous cyst or other deformity at the umbilicus.

3. No communication at the umbilicus, the diverticulum being attached to either the mesenteric or antimesenteric side of the bowel.

Again quoting Shannon[6]: "It may or may not have a separate mesentery or may be contained within the mesentery of the bowel. It may be fixed at the distal extremity of the umbilicus or to any structure within the abdominal cavity."

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It may contain gastric glands, ciliated epithelium or pancreatic anlage.

Vaughan and Singer, quoted by Pfahler,[12] state that "elements of gastric, duodenal and colonic character, also glandular tissue or pancreatic tissue of questionable origin may be found within the walls of the diverticulum." Gastric mucous membrane is said by Koch[7] to occur in twelve per cent and by Schaetz[8] in 16.6 per cent. Hunt and Bonesteel[9] in March, 1934, report the fourteenth case of Meckel's diverticulum containing aberrant pancreas. They state that the acini are always present and that the islands of Langerhans may or may not be recognizable.

Pathological Changes. — As elsewhere these are inflammatory and neoplastic. Schullinger and Stout[10] report a case of adenoma of gastric and duodenal glands in the neck of a Meckel's diverticulum. The most prominent clinical manifestation of their case was bleeding, though no ulceration was present. Other neoplasms reported are polyps, lipomas, angiomas, myxomas, sarcomas, carcinomas, and carcinoids.

Various types of inflammation may occur. The pyogenic type occurs from local trauma, as part of an enteritis, by compression of a hernial sac or by retention of feces (as in the valvular type) or by foreign bodies. Inflammation may be catarrhal or it may continue to necrosis or gangrene and perforation. Chronic inflammation may lead to ulceration, fibrosis or stricture. Typhoid ulcers have been reported. Michael[11] reported the ninth case of tuberculosis of a Meckel's diverticulum in 1932. This complication has always been a part of tuberculous enteritis or tuberculosis elsewhere and in his case it caused a constriction in the colon which was recognized by X-ray and thought to be neoplastic.

As heterotopic gastric tissue is fairly common, pathological changes referable to this anomaly are not infrequent. Hudson and Koplik, quoted by Hiller and Bernard,[3] found gastric mucosa in fifty-two per cent of twenty-three cases. They state that the ulcers are "not of the peptic, but of the gastrojejunal type, with acid secreting mucous membrane impinging upon the alkaline-secreting intestinal mucosa, giving corrosion and penetration going to hemorrhage and perforation. Schullinger and Stout[4] state that "the bleeding from a Meckel's diverticulum is usually associated with an ulcer which resembles an ulcer of stomach or duodenum at the border between the two types of epithelium and hence near the base of the diverticulum." Some are in the intestinal mucosa, some in the aberrant tissue.

Intestinal obstruction may occur by any one of six methods[12]:

1. The diverticulum being attached to the umbilicus, a loop of gut may fall over it like clothes over a clothesline.
2. If the diverticulum ends in a cord the latter may gain a secondary attachment (usually to the root of the mesentery) and form a loop which ensnares the intestine.
3. The tip may become attached to the mesentery and by traction form a kink of the ileum at the point of origin of the diverticulum.
4. Intussusception.
5. The diverticulum may provide an axis around which a volvulus, confined to the diverticulum or extending to the bowel, may develop.
6. Obstruction may occur from chronic ulceration with fibrosis and stricture.

Clinical Manifestations.—As Meckel's diverticulum is present in about two per cent of all individuals and is commonly found at autopsy without having given symptoms, it would seem that there are no clinical manifestations unless some pathological condition occurs.

As the diverticulum is in many ways analogous to the appendix, acute diverticulitis naturally resembles acute appendicitis. A past history[10] may be obtained from the parents of a slowly-healing umbilicus or persisting sinus for varying lengths of time after birth. There may be constipation with rather vague, indefinite, generalized or periumbilical pains. There may be other anomalies such as harelip, cleft palate, dextrocardia, patent interventricular septum, meningocele, exstrophy of the bladder or incompletely rotated cecum. Christie found at autopsy anomalies in twenty-one out of sixty-three cases of Meckel's.

The symptoms may appear in the first months of life or more often in childhood. They do occur in later life, but are most frequent in the first two decades.

In simple acute inflammation the onset is often during exertion rather than quiescence contrary to appendicitis. Neither is the pain as sudden or as severe, nor is the vomiting as persistent. It is more difficult for the patient to localize, as the lesion is in a freely moving loop of ileum. Hence, there is no mass unless there is abscess or intussusception. The pain, rigidity, and tenderness may be closer to the mid-line.

Hemorrhage is a frequent symptom. The blood is unmixed with the stool. This, plus the absence of a mass, is a good point of differentiation from intussusception. The stools are more frequent and larger.

Vaughan and Singer, quoted by Pfahler[12] state that the occurrence of sudden, violent pain beginning usually in the lower abdomen and followed almost immediately by symptoms and signs of diffuse peritonitis is characteristic of a perforated ulcer. When the patient is a child, the likelihood is still greater that the ulcer is located in a Meckel's diverticulum. The peritonitis of appendicitis requires several hours or a day to develop. In the ulcer without perforation there may be abdominal pain especially before meals and relieved by food, or rhythmic distress an hour and a half before meals as in Kleinschmidt's case.

In intestinal obstruction of this type the pain is severe, vomiting pronounced, and there is no fever in the early stages.

Fevre et als., quoted by Schullinger and Stout,[10] suggest the following postulates:

1. A young man with recent hemorrhages from the rectum followed by acute peritonitis suggests Meckel's.
2. In bleeding of unknown origin never close without looking for Meckel's.
3. If the operation is for intestinal hemorrhage and a diverticulum is found, remove it regardless of its benignity.
4. In gastrointestinal bleeding in infants or boys, cause indetermined, do a laparotomy.
5. Look for a diverticulum if operative findings are not in accord with preoperative diagnosis.

X-ray Findings.—Pfahler[12] reports two cases of Meckel's diverticulum which he diagnosed by X-ray. The first was in 1923, a white male infant of seven and one-half months, with bleeding. Barium was given by mouth and a series of films were taken by instantaneous exposure. Thirty minutes after the meal, with the child prone, he found a pear-shaped body four centimeters long with the base downward and to the right, and stem upward and inward. This was found only when the child was prone; hence he assumed that the base was anterior and that the diverticulum emptied with the child on its back or side. The shadow showed peristalsis, changing shape from film to film. The child had had a brother who died at the age of one year during exploratory laparotomy following a second bowel hemorrhage, the autopsy showing a ruptured Meckel's diverticulum. In Pfahler's case the operator confirmed his diagnosis, finding a diverticulum eighteen inches from the ileocecal valve on the upper anterior surface of the ileum, the base being one-half inch in diameter, of funnel shape, one and one-fourth inches long, the distal end attached to the mesentery. It was not inflamed. It was ligated and excised and the stump peritonealized. He diagnosed another case in a white male of seven in 1931. This case was not operated upon as it became symptom-free.

He urges a careful search, realizing that every position is necessary, as the base may be anterior, posterior, vertical or at any angle. He suggests repeated examinations as at times the diverticulum may be filled with a nonopaque substance. Its characteristics are those of any diverticulum, *i. e.*, smooth in outline, showing peristalsis and, although this is questionable, he states that it retains a position at a fixed point.

The X-ray findings, by fluoroscope or film, of a line of air under the diaphragm is usually clear and unmistakable in cases of perforated ulcer. Whether of the Meckel's or the peptic type can be determined by the clinical manifestations.

Treatment.—The operative procedure depends entirely upon the anatomical characteristics and the degrees of inflammatory changes. In the simplest type, excision and inversion as of the appendix is possible. With a broader base this is impossible and excision and enterorraphy are done. If this is impossible or the degree of induration of the ileum prevents it, resection must be done. Occasionally nothing except drainage is practicable.

CASE REPORTS

Case I.—K. B., white male of fifteen, admitted to University of Virginia Hospital, July 26, 1933, complaining of appendicitis. Onset forty hours before admission with generalized abdominal cramps followed by nausea and vomiting. No localization of pain; no urinary symptoms. The patient had had some similar indefinite attacks. He was seen by his family physician the night before and the diagnosis of appendicitis was made.

On admission temperature of 99.4 degrees, white count 15,400, urine negative. General physical examination negative except for enlarged tonsils. Abdominal examination showed very slight spasm with moderate bilateral lower quadrant tenderness high on the right rectal. The diagnosis of probable acute appendicitis was made.

Under spinal anesthesia, supplemented by general, the abdomen was opened through a short mid-right rectus incision, the muscle being retracted medially. There was large amount of clear straw-colored fluid in the peritoneal cavity. The appendix, which was normal, was removed in the usual manner, the stump carbolized and inverted with two purse-string sutures of silk. This was not thought adequate to account for the patient's manifestations so the ileum was explored and a Meckel's diverticulum found about thirty inches from the cecum on the antimesenteric border. It was about eight centimeters long two centimeters wide at the tip and five centimeters wide at the base. There were a few flakes of fibrin on it. Definite peristalsis was seen to occur in the diverticulum. The gas and fecal material were evacuated from the pouch, a rubber-shod clamp placed below it and it was amputated. The ileum was then repaired, using the Connell stitch and continuous right angle suture. The abdomen was then closed in layers without drainage and the patient returned to the room in good condition.

Pathological report: The lumen of the diverticulum is mostly filled with branching papillary growths of the mucosa whose stroma is infiltrated with numerous polymorphs.

The appendix shows flattening of lining mucosa by fecal material. Slight mononuclear infiltration and thickening of submucosa and serosa.

Diagnosis: Papilloma of Meckel's diverticulum showing subacute inflammation. Slight chronic appendicitis. Postoperative course. Uneventful. Wound healed cleanly, suture being removed on the fifth day and patient being discharged on August 3, 1933, eight days after operation, in good condition.

Case II.—Miss E. H. This patient is an unmarried white girl of twenty, who was admitted to the University of Virginia Hospital complaining of abdominal pain. Onset about twenty hours before admission with generalized abdominal cramps followed by nausea and vomiting and localization in the right lower quadrant. No previous attacks. No urinary symptoms. Menstrual history negative, last period ending three weeks ago. Bowels regular.

On admission temperature 99.6 degrees, white count 7,600, urine negative. Abdominal examination showed slight tenderness in the lower quadrant. Pelvic examination showed an introitus which admitted two fingers readily, uterus slightly retroverted, right ovary palpable and the pain of complaint was reproduced by manipulation of cervix. Moderate cervicitis. The preoperative diagnosis was acute appendicitis or ruptured ovarian follicle.

Under satisfactory spinal anesthesia, the abdomen was opened through a McBurney incision. The appendix, which was quite benign in appearance, was removed in the usual manner, the stump carbolized and inverted with two purse-string sutures of silk. The ileum was explored and a Meckel's diverticulum found about five centimeters from the ileocecal valve on the free border. This was four centimeters long, one and one-half centimeters wide at the tip with a flaring base three centimeters wide. The ileum was dropped back, the pelvis explored, and a recently ruptured graafian follicle found on the right ovary. The right tube and ovary were normal. The diverticulum was then delivered into the incision, the wound thoroughly packed off and diverticulum removed in a manner similar to that employed for appendectomy. It was excised without soiling and its stump inverted with two purse-string sutures of silk. The inversion was quite satisfactory and the lumen of the ileum was not impaired. The abdomen was closed in layers without drainage and the patient returned to the room in good condition.

Pathological report: Gross description: Appendix six centimeters by five millimeters intact; closed pouch two centimeters in length. At its distal end a number of grayish nodules are seen. On section it is seen to consist of a thick mucosa thrown up in folds as almost to occlude the lumen.

Microscopical description: Appendix normal. Meckel's diverticulum. Mucosa and submucosa extremely congested. The mucosa is intact, but moderately infiltrated with polymorphs. Remaining coats unaltered.

Diagnosis: Early acute Meckel's diverticulitis. Postoperative course. Uneventful. Skin stitches removed on fifth day. Wound healed cleanly. Patient discharged on the same day.

Case III.—Mrs. P. G. This patient was admitted to the University of Virginia Hospital, November 29, 1933, on the medical service. On a previous admission, January 30, 1928, she was given a diagnosis of hypertension, blood pressure being 200/110; ulcer of the stomach and pathological gall bladder, the latter two diagnoses being roentgenological. She was considered a poor operative risk, was put on a diet, given the usual instruction and discharged. Present illness is of thirty-six hours' duration, although she had had some vague abdominal discomfort for two months. Thirty-six hours before admission she had generalized abdominal pain and nausea. About twenty-four hours before admission the pain increased in severity and localized in the right lower quadrant. Bowel movements normal; no jaundice; no urinary symptoms.

On admission temperature 101.6 degrees, pulse 108, white count 13,000, urine negative except for a few casts. She was rather drowsy and somewhat unresponsive. There was rather marked obesity. Blood pressure 175/110; slight generalized arteriosclerosis. Abdominal examination showed slight generalized spasm and tenderness with most marked tenderness and the suggestion of a mass in the right lower quadrant. She was given intravenous fluids and four hours later temperature was 101.4 degrees, white count 14,000. She had good results from an enema in which there was no blood. Abdominal examination then showed spasm and tenderness even more definitely localized in the right lower quadant. Pelvic examination then showed a mass apparently in the mid-line and thought by one observer to be attached to the uterus. She was thought to have sufficient evidence of intra-abdominal disease to justify exploration.

Under satisfactory spinal anesthesia, the abdomen was opened through a right rectus, muscle-splitting incision. The appendix was visualized and was found obliterated and slightly secondarily inflamed. A mass was discovered just medial to the appendix and just to the right of the mid-line. After some dissection this mass was found to be ileum with a Meckel's diverticulum about seven centimeters long and five centimeters wide throughout. It was extremely indurated and almost gangrenous at the tip. The adjacent ileum was quite indurated. The diverticulum had a definite mesentery and came off the side of the ileum. The mesentery was ligated, crushing clamps applied to it after isolating a loop of ileum by rubber-shod clamps and delivered into the wound. It was then removed between clamps, the ileum inverted doubly with a running right angle stitch of chromic catgut. It was then reinforced with several interrupted stitches of silk. The ileum was so indurated that it was doubtful whether or not the sutures would hold. However, it was thought better to risk this than to risk resection in view of the patient's age and general condition. The lumen of the ileum was considerably narrowed by this procedure, but it was thought that it would dilate after the inverted tissue sloughed. A No. 18 soft rubber catheter was inserted in the ileum about twenty centimeters above the diverticulum. This was inverted with two purse-string sutures of catgut and a tunnel formed around it by several interrupted sutures of the Witzel type. The intestine was then replaced in the abdomen, the omentum pulled around it, allowing the enterostomy tube to emerge through a stab wound in the left flank. The appendix was not removed. The abdomen was closed in layers in the usual manner without drainage.

The patient went through the operation very well and was returned to her room in good condition.

Pathological report: Tissue. Meckel's diverticulum. Gross description: Hollow cul-de-sac about 2.5 centimeters in diameter, about six centimeters long, kinked in midportion with adherence of tip to proximal portion. Membranous capsule with grayish plastic material on surface, wall hemorrhagic. Cavity lined by mucous membrane which is hemorrhagic and appears necrotic.

Microscopical examination: Meckel's diverticulum with ulceration and necrosis of mucosa and phlegmonous infiltration and gangrene of wall.

Diagnosis: Acute gangrenous Meckel's diverticulitis with fibropurulent peritonitis. Postoperative course uneventful except for infected wound. Discharged December 10, 1933, with general condition good and wound granulating.

Case IV.—Mr. L. W. H., white male of thirty-two, entered McSwain Clinic, December 11, 1934, complaining of abdominal pain. He had had twelve attacks of similar pain in the past five years. The present one started three days before admission with generalized abdominal pain which shortly afterward localized in the suprapubic area. There has been nausea and vomiting and temperature as high as 101 degrees. Constipation during the attack; no bloody or tarry stools; no urinary symptoms.

On admission, temperature 101.2 degrees, pulse 110, white count 18,000. General physical examination negative. Abdominal examination showed moderate distention, with marked muscle spasm and tenderness over entire lower abdomen, most extreme in mid-line, just over the pubic symphisis.

Under satisfactory spinal anesthesia, the abdomen was opened through a right rectus incision, the muscle being retracted laterally. The intestines were gently separated until an abscess cavity was opened into. There were several cubic centimeters free fluid in the abdominal cavity, fairly cloudy, but not definitely purulent. There were densely adherent coils of ileum in the pelvis. When these were separated a large quantity of pus was evacuated as an abscess cavity was opened into. The source of infection was a small Meckel's diverticulum of the ileum which was perforated at its tip. The exact outlines of the original pouch were indefinite, but it was apparently about three centimeters in diameter and on the antimesenteric border. No other exploration was done. The diverticulum had sloughed in part, but the ileum was not too indurated to hold sutures. The remaining pouch was inverted with a continuous right angled stitch of chromic No. 0 catgut and reinforced with two Cushing sutures of silk. The lumen of the ileum was not narrowed sufficiently to cause fear of obstruction. A Penrose cigarette drain was placed in the abscess cavity and allowed to emerge from the lower angle of the original incision. The omentum was placed over the repaired gut and the abdomen closed in layers.

Postoperative course fairly smooth. The wound drained profusely for eight days. Skin stitches and drain removed on the seventh day, silkworm sutures on the sixteenth day, and the patient discharged on the eighteenth day with temperature and pulse normal and wound healed except for small granulating area at the lower pole. Completely healed and ambulant one week later.

Case V.—Miss L. A., white female of twenty-two, admitted to McSwain Clinic, March 2, 1933, complaining of abdominal pain. Onset thirty-six hours before admission, with generalized abdominal pain which has been intermittent in character and accompanied by nausea and vomiting. No localization of pain, no radiation to back, groin or genitalia. Some results from first enema, but no feces or gas following this.

On admission temperature ninety-nine degrees, pulse 104, white count 15,000, urine negative. General physical examination negative. Abdominal examination showed moderate distention, more in the region of the umbilicus. Slight generalized tenderness. No muscle spasm or masses.

Under nitrous oxide-ether anesthesia, the abdomen was opened through a mid-line suprapubic incision. About forty centimeters from the cecum a Meckel's diverticulum was found which was somewhat conical in shape and six centimeters long by three centimeters wide at the tip and four centimeters wide at the base. It emerged from the antimesenteric border. A band extended to an adjacent coil of ileum in such a way as to cause complete obstruction. The band was divided and gas immediately flowed into the collapsed loop. The diverticulum was clamped with a crushing clamp at its base and excised. The ileum was closed by a continuous right-angled stitch of chromic No. 0 catgut, inverting it satisfactorily in spite of some induration of the gut wall. It was reinforced by a few interrupted right-angled stitches of the same material. The lumen of the ileum was not narrowed enough to cause fear of future obstruction. Abdomen closed in layers without drainage.

Pathological report: Gross description: Meckel's diverticulum six centimeters long with definite thickening and redness of serosa. Microscopical examination: Mucosa and submucosa congested, but intact. Marked infiltration with polymorphs.

Diagnosis: Acute Meckel's diverticulitis. Postoperative course uneventful. Skin stitches removed on the sixth day and retention sutures on the tenth day. Wound healed cleanly. Discharged on the tenth postoperative day.

SUMMARY AND CONCLUSIONS

1. Five cases of Meckel's diverticula with varying degrees of inflammation are presented.

2. These cases are not rare and should be sought for in all instances in which the lesion suspected preoperatively does not explain the clinical signs and symptoms.

3. Two types of operative procedures are exemplified, *i. e.*, excision and inversion and excision and enterorraphy. One other procedure, that of resection, is possible.

4. The fact that in all three of these cases the preoperative diagnosis of acute appendicitis was thought most likely shows the difficulty of differentiating these two lesions. However, immediate laparotomy is the wisest course to follow in either instance.

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COMMON ERRORS IN THE MANAGEMENT OF THE CARDIAC PATIENT*

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ONE CANNOT engage in the practice of medicine for many years until he realizes the many pitfalls that exist both in the field of diagnosis and the management of cardiac patients. With all the diagnostic procedures one can summon to his aid mistakes will be made. It is little wonder, then, that where many of the mechanical aids are not accessible mistakes are made in diagnosis of heart diseases. And in the field of therapy there is no standard program of treatment that can be put forward which is acceptable to the profession as a whole. One physician may be using with considerable success a program of treatment which seems entirely wrong to others. For instance, some advise the use of quinidine sulphate routinely in cases of acute coronary occlusion, whereas this is considered a dangerous practice by a majority of men working in this field. But putting aside those few cases where recourse must be had to the fluoroscope, electrocardiogram, basal metabolism, and other laboratory studies for accurate diagnosis, there still remain cases that are inaccurately and incompletely diagnosed because the examining physician has failed to interpret correctly information obtained in the history and facts elicited on physical examination. Likewise, when questionable points in management of certain special forms of heart disease are set aside, there are many basic principles in the treatment of heart patients that are being ignored altogether, or applied in a halfhearted indifferent way that can only result in disaster to those being treated for these severe ailments.

To facilitate discussion of the subject under consideration, "Common Errors in the Management of the Cardiac Patient," the subject will be presented under two subheads:

I. Errors in Management Due to
   A. Incomplete Diagnosis.
   B. Inaccurate Diagnosis.
II. Errors in Management Due to
   A. Insufficient Medication.
   B. Overmedication.
   C. Improper Dieting.
   D. Poor Environment.
   E. General Regulatory Measures.

Under I-A, errors due to incomplete diagnosis, a case history will best illustrate the pitfalls that exist for the doctor who fails to make a complete examination of every patient who consults him. Only in this way can all pathological states be determined and, where possible, correlated into one interrelated clinical picture.

Case History.—Grammer.

The association of overactivity of the thyroid gland, usually undetected, with other forms of heart disease, chiefly hypertensive heart disease, is a frequent occurrence. Our files now contain numerous such instances and one should always be on the lookout for this combination in any patient who fails to respond satisfactorily to treatment, particularly elderly cardiacs.

Thyrotoxicosis is the most frequent cause of auricular fibrillation next to mitral valvular disease.

A high pulse pressure, say 160/70, in a young person is due to aortic regurgitation either syphilitic or rheumatic, or thyrotoxicosis; in an elderly person, a rigid aorta, or sclerosis of the aorta, must be added to the above possibilities.

The time has come when it is just as inaccurate to make a diagnosis of heart disease without making a complete diagnostic study of the patient as it is to make a diagnosis of fever without determining whether due to malaria, typhoid, tuberculosis or other infectious processes. All too often it is true that the attending physician fails to pay sufficient attention to conditions elsewhere about the body which may be affecting harmfully the basic cardiac condition.

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*Read before the Tennessee State Medical Association, Nashville, April 12, 13, 14, 1938.

Thus anemia, dietary deficiencies, obesity, urinary tract obstruction, or infection, chronic pulmonary infection, worry and loss of sleep, excessive use of coffee, tobacco, diabetes may be aggravating a basic hypertensive or rheumatic heart disease, or actually precipitate a period of decompensation. The most carefully worked-out plan of treatment for an elderly hypertensive may be brought to naught by chronic prostatic obstructions. Every cardiac should have a Wassermann test made.

If many common errors in the management of cardiac patients are to be avoided then the diagnosis must be complete—complete for the type or types of heart disease present; and embrace all conditions about the body that might influence adversely the heart or interfere with the plan of treatment instituted.

Under I-B, the term inaccurate diagnosis is used to comprise that group of patients presenting symptoms referable to the heart and suggesting heart trouble, but who actually do not have heart trouble. For example, a young man, age thirty-three, was seen recently with this history. All of his life he has clerked in a general merchandise store in the country. In February he decided to get out of the store and farm. He moved to a farm and immediately began clearing land, chopping trees and bushes all day. One day shortly after beginning this hard work, while cutting wood, he felt his heart jump, and it seemed to skip a beat. This continued to occur off and on for several weeks and he became alarmed and consulted his family physician. He was put to bed on digitalis and had been in bed two weeks when sent to us for study, the attending physician at that time expressing doubt that the patient had heart trouble. A more thoroughly frightened and miserable patient never consulted a doctor. He had never been sick in his life—no rheumatic history; venereal diseases denied. No precordial pain, dyspnea or edema. Heart not enlarged, regular, rate 65, no murmurs. Electrocardiogram normal and fluoroscopic examination negative. Wassermann negative. No doubt, as a result of too violent exercise, after years of indoor clerking, this patient had occasional premature beats, though none were heard on our examination. This young man was assured that he did not have heart disease; that he might occasionally have more such beats, but not to worry about them. A more gradual resumption of his farming duties was advised.

The error in the management of this patient was in considering premature beats as evidence of heart disease. Premature beats should never be advanced as evidence for or against a diagnosis of heart disease. Usually they occur in perfectly normal hearts and are brought on by overwork, loss of sleep, excessive use of coffee, tea, coca-cola, tobacco, alcoholic drinks, worrying, etc.

Any symptom of heart disease may be, and often is, caused by conditions unrelated to the heart.

Dyspnea by emphysema, hydrothorax, anemia, obesity.

Edema of the lower extremities by ascites resulting from cirrhosis of the liver; varicose veins, fallen arches, anemia, nutritional deficiencies.

Precordial pain by aneurysm of the aorta, mediastinal tumors, diverticulum of the esophagus, arthritis of the dorsal spine, arthritis of the left shoulder, shingles, pleurisy, etc.

Systolic murmurs by anemia, fever, a rapid pulse from any cause. The majority of systolic murmurs, unassociated with cardiac enlargement, or a diastolic murmur, are functional in type and do not indicate heart disease.

Thus it will be seen that accuracy in diagnosis calls for a critical study of the patient, and proper evaluation of all symptoms and signs elicited by a carefully taken history, detailed examination, and proper laboratory and X-ray studies. To tell a patient that he has heart trouble because he has dyspnea on exertion, afternoon edema that disappears at night, and lacks endurance oftentimes is a gross miscarriage of diagnostic justice. This same symptom complex is the one usually presented by pernicious anemia, carcinoma, anemia from bleeding hemorrhoids, or any other debilitating illness.

The relationship of pregnancy to heart disease is one that frequently comes up and is often difficult to answer. Pregnancy places an added burden on the heart, and this burden placed on a heart previously damaged may be sufficient to precipitate failure. If there has been a period of decompensation previously, it is rarely safe for pregnancy to continue. If the expectant mother is a known hypertensive, and early in pregnancy the blood pressure shows a decided tendency to rise, the pregnancy should be terminated. Hypertension as a result of chronic nephritis usually calls for the immediate termination of pregnancy. One is often amazed, however, to see a young expectant mother with frank rheumatic heart disease go through pregnancy and labor without one sign of cardiac embarrassment. Such experiences make one hesitate to advise termination of pregnancy in any but the more advanced cardiac patients. Every case must stand on its own merits. It is important early in pregnancy to determine the functional state of the myocardium, and usually it is possible by proper regulation of exercise and rest, diet outlined to prevent excessive gain in weight, and other regulatory measures to carry the patient safely to full term.

We turn now to the latter part of the paper which is concerned chiefly with errors in therapeutic management of cardiac patients; errors of omission and errors of commission; of insufficient medication and overmedication.

Prior to decompensation drugs have little if any part in the treatment of heart disease. From the time of the inception of the cardiac condition, however, there is much that can be done to put off the evil day of failure, thus adding years to the useful life of the individual. These procedures pertain to every phase of life—diet and weight, exercise and rest, immediate attention to infections, such as colds; avoidance of nerve strain and worry; proper climate and altitude. To neglect the early years of the cardiac's life is only to hasten an early break in compensation.

When evidence of heart failure supervenes then the real therapeutic battle begins. Obviously it is impossible to discuss all phases of treatment relating to cardiac decompensation or to cover even a small part of the subject, but there are certain errors in management that occur so frequently that it is always helpful to bring them into the open and discuss them freely and frankly.

In any discussion of this kind, first place should be given to the uses and abuses of digitalis. In spite of all that has been said and written for years on the subject of digitalis therapy this still is the most abused drug in the treatment of heart diseases. Sooner or later it will be needed in every case, certainly in every case that shows signs of decompensation, or where auricular fibrillation supervenes. Therefore the indication for beginning digitalis therapy, the proper dosage, how long to continue its use, the signs of digitalis intoxication, the various preparations of digitalis and their relative merits, and other important facts, should be understood and utilized when the drug is given to any patient. Without attempting a lengthy discussion of the questions raised above, a few everyday facts will be set forth in the ensuing paragraph.

The chief indication for digitalis therapy is heart failure early or late. To achieve satisfactory results digitalis must be given to full tolerance. The time consumed in producing digitalization may be twenty-four hours, or several days, depending upon the degree of emergency that exists. There are cardiac emergencies that call for heroic doses, though, as a rule, it is safer to utilize five to seven days in giving the amount calculated to secure full therapeutic effect. When digitalization has been accomplished, a daily maintenance dose of twenty minims of the tincture, or one and one-half grains of the leaves must be given as long as needed, which may be for some months or the remainder of the patient's life. A standard preparation of powdered leaves is to be preferred, though a fresh tincture may be used with satisfactory results if given in proper amounts. The many high-priced preparations on the market have no advantage over the standard tincture and powdered leaves. Oral administration is the route of choice. At the beginning of treatment, on the basis of one and one-half grains of the leaves, or twenty minims of tincture, per ten pounds of body weight, calculate the total amount needed to digitalize the patient, add one and one-half grains for each day utilized in the process of digitalization, and give the total amount as rapidly as indicated. We have never seen a patient who could not take digitalis because of sensitivity to the drug. Many think they cannot take it, but if given properly, they soon find they can.

The more important signs and symptoms of digitalis poisoning are as follows: nausea and vomiting, premature beats, diarrhea, blurred vision, excessive slowing of the rate. When any one or more of these signs occur, the drug should be withdrawn for several days then resumed on reduced dosage as the signs of intoxication clear up.

If in a previous break in compensation digitalis was given in overdosage and the patient made sick, with frequent vomiting, loss of appetite, and weak from insufficient food, in subsequent periods of decompensation the patient frequently will refuse digitalis altogether, and thereby suffer the loss of his most effective means of supporting a failing myocardium.

A warning should be issued against the use of digitalis in patients with acute coronary occlusion. A fatal heart block may result. The same can be said of quinidine sulphate in similar cases. If there are evidences of acute left ventricular failure, such as extreme pulmonary edema, orthopnea, cyanosis, then digitalis may be given in large doses and at times will be lifesaving. The danger of heart block still exists, but the dangers of heart failure outweigh the danger of block, and the drug should be used.

Next to digitalis morphine is the most useful drug in severe decompensation and rarely is used in sufficient amounts or over long enough periods of time. After the emergency has passed, and in chronic cases, sodium bromide and chloral hydrate are the drugs of choice when sedation is needed. Aspirin may be used when needed, and is perfectly safe in all forms of heart disease.

Diuretics are not used as often, nor as early, as they should be used.

Digitalis, by improving the circulation, may produce sufficient diuresis. If edema is only slight, theocin, ammonium chloride, or other mild diuretics may be tried. If the output of urine is not increased in three or four days, the drug should be stopped and some other preparation tried. If edema is extreme, then one of the mercurial diuretics, salrygan or novasurol, should be given first, without trying the milder diuretics mentioned above. These latter are powerful diuretics and will often result in five to ten thousand cubic centimeters output in twenty-four hours. They should always be given intravenously, never used when there is much nephritis present, and will often produce better results if preceded two or three days with ammonium chloride or nitrate in rather large doses. The dose may be repeated in five to seven days, occasionally in three days in an emergency. The indications for stopping the injections are the development of diarrhea, salivation, or an increase in blood in the urine.

Under II-B, overmedication, the chief offense is in the use of cathartics. There are times, in the presence of marked edema, when a saline cathartic may be given with benefit each day for several days. On the contrary, the practice, frequently indulged in, of ordering large doses of salts every morning, week in and week out, as we see done frequently, is unwise, and often leads to serious consequences for the patient. Too much purgation interferes with the appetite, predisposes to gaseous indigestion, results in anemia, often weakens the patient, and adds materially to the already unhappy lot of the cardiac cripple. Usually one bowel movement a day, or every other day, is sufficient. A simple laxative tablet is usually all that is needed.

It is usually a mistake to leave routine orders for sedatives in cardiac patients. This is a prolonged illness, and if the patient is not to be seen daily, an order for phenobarbital grains one-half three times a day will be continued day after day by the family. After several days the doctor will be called hastily because the patient is trying to get out of bed; does not know where he is and looks about with a vacant stare. The family is frightened, thinking the patient has lost his mind and the patient injured by undue exercise when quiet is all-important. Use sedatives sparingly and for as short periods of time as possible.

II-C. *Improper Dieting.*—The diet in the cardiac patient should be low in roughage, nutritious, simply prepared, and adequate in caloric value. There is congestion in the gastrointestinal tract just as there is in the rest of the body. Therefore the functions of the digestive organs are interfered with. Large meals cannot be eaten; heavy greasy food will not digest. The simplest rule to follow is this—let the patient eat anything his appetite calls for; give small feedings every three hours, rather than large meals three times a day; prepare the foods simply and serve appetizingly. Too little attention is paid to the diet in this class of patients.

II-D. *Poor Environment.*—Often the general comfort of the cardiac patient is neglected, and a well-regulated program of treatment thereby brought to naught. The sickroom should be bright and airy, exposed to the sunlight when possible, and the bed so placed that the patient can get a glimpse of the out of doors. Anxious friends and relatives should be given the no trespassing sign, and those visitors permitted should be made to observe the rest hours of the invalid. These matters can be handled in the home as well as in the hospital, if someone at home has sufficient firmness and tact, reinforced by definite medical instructions along these lines.

II-E.—There are matters which need the urgent consideration of the medical attendant for years before decompensation sets in, and for years after the patient has been restored to activity, following a period of decompensation. Failure to be specific in regard to the amount of exercise to be taken, diet, control of weight, prompt attention to infections, periods of rest, etc., may hasten the onset or recurrence of decompensation and be disastrous to the patient.

All too often when confronted with a severe cardiac condition, and realizing the incurability of the heart lesion, an attitude of indifference, or hopelessness, is assumed and the patient allowed to drift along rather than follow a well-regulated regimen of treatment. Because the patient has a "bad heart" we hide behind this fact, realizing that whether he dies now or later the family and friends will not be critical. Carelessness, or indifference, or ignorance are shielded behind the diagnosis of "heart disease," and nurtured by the incurability and seriousness of the problem itself. This attitude is not justifiable under any consideration, and when the results of a well-regulated plan of treatment, followed carefully year by year, are compared with the haphazard, indifferent management, it is totally indefeasible. Much can be done for the cardiac cripple to make him comfortable and happy, prolong life, and enable him to be active and self-supporting. This is a plea for a brighter outlook upon the whole field of heart disorders—one of aggressive, well-planned management backed up by a genuine interest on the part of the attending physician.

Two quotations come to mind in closing this paper: "O carelessness, how many crimes are committed in thy name" and lastly "Knowledge is power, but knowledge is useless unless we do the good we know."

DISCUSSION

DR. PHILIP H. LEVINSON (Chattanooga): Mr. President and Members of the Tennessee State Medical Association: Dr. Cate has analyzed well the common causes of failure in the study and treatment of heart disease. He has given us a thoroughly practical paper.

It has been my experience that most failures are due to either incomplete or faulty examination or an inadequate interpretation of the features found on study. Most often the general physical examination is slurred. The eye grounds deserve study always. Rales at the bases are often evidence of heart disease. An enlarged liver is cardiac in origin until otherwise proved. Hemorrhoids should be considered a possible sign of heart failure. A slight pretibial pitting is not to be disregarded; it may progress to general anasarca. Elasticity of arteries is tested by rolling the brachial arteries under the fingers. Blood pressure readings should be done carefully. If the level is labile, at least three readings are necessary, and it is my experience that these are best done in fairly rapid succession. Many failures to record the systolic pressure accurately occur because of a lack of knowledge of the auscultatory gap. A noiseless period may occur in the second phase of the pulse sounds. Hence, it is best always to inflate the cuff to a high level before the auscultation of the pulse sounds is attempted.

A study for pulsus alternans, because of its great significance and its ease of identification, is indicated in all cases.

As to the cardiac examination proper, it is essential that the examination be conducted with the patient in both the sitting and the supine positions if possible. Percussion of the heart outline is often disparaged, but to me has often given suggestive evidence of left auricular or pulmonic enlargement.

Auscultation demands both the diaphragm and the funnel-type stethoscopes. The soft blowing diastolic murmur of early aortic regurgitation is often heard only with the diaphragm instrument, the patient being in the sitting posture, and it is only in this stage before obvious signs of the disease set in that we may be able to do much about the lesion. Similarly, the presystolic rumble of mitral stenosis is heard best with the patient lying down or on his left side, and often only after exercise or amyl nitrite, and often only with the bell stethoscope.

A blowing systolic murmur at the apex may be of no consequence, but a definite swishing first sound, especially if somewhat loud, is in most cases indicative of heart involvement and necessitates further study, including the electrocardiogram.

Extrasystoles in themselves may mean nothing, but if they are quite numerous or occur in rhythmic arrangements such as bigeminy, trigeminy, coupling, and so on, they are usually indicative of heart disease.

The need for thyroid study should be emphasized, especially in auricular fibrillation and in cases showing high pulse pressures. Thyrotoxicosis often occurs in apparently well-nourished individuals, in those without enlarged thyroid glands, and even when block occurs in those with a slow pulse. Inasmuch as this is the one cardiac condition in which real cure may be effected, the importance of keeping it constantly in mind is perfectly clear.

As to the treatment of heart failure, it has been my experience that most of the poor results are due to insufficient digitalization. Digitalis should be given for effect, not according to any standard of dosage, for many do well on small amounts while some require apparently excessive doses. The number that are sensitive to the drug are few, and in these squill derivatives and the various diuretics should be pushed. It should be recalled that digitalis itself, after slowing an irregular rhythm, may in its intoxication produce almost every type of cardiac irregularity, including auricular fibrillation itself. If there is any doubt about overdosage, discontinue the drug or take an electrocardiogram. In coronary occlusion I give the drug when heart failure, as evidenced by edema, is present. Quinidine is given in the same condition when irregular rhythms occur, so as to lessen the heart's load and prevent ventricular fibrillation.

Salts are rarely used. They tend to weaken the patient, effect little loss of fluid, and cause continuous use of the bedpan that is tiring. The mercurial diuretics, especially mercupurin and mercurin suppositories, are usually well tolerated and are often given when renal irritation is already present.

Finally, Dr. Cate's advice on an optimistic outlook for the patient is especially worthy. The attitude of a happy, useful, if somewhat less active life can usually be inculcated without great difficulty.

DR. W. R. CATE (closing): Mr. Chairman, I want to thank Dr. Levinson for his very enlightening remarks on the subject of this paper. He emphasized particularly the many pitfalls that exist in the interpretation of precordial pain. More errors are made in the interpretation of chest pains than in any other condition pertaining to the heart. It is our experience that most patients that come in complaining of pain which they ascribe to the heart do not have heart trouble and the pain is extracardiac in origin. Great care must be exercised in the study of these patients because once a patient has been told he has an angina or coronary artery disease in most instances he will be a cardiac cripple the remainder of his life even though the pain may have no connection with the heart whatever.

There has been a great deal written in the past few months about coronary occlusion and numerous talks over the radio on this subject and it is not beyond possibility, as we have had occur recently, that a patient will call up in the middle of the night and say he has pain in the chest which is very much like coronary occlusion. The laity know the symptoms of this condition and it is up to the doctor to be on his guard at all times and not make a false diagnosis in these cases.

PRESENT-DAY CONCEPT OF NEPHRITIS*

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EACH YEAR BRINGS forth new articles which contribute to a better understanding of the relationship between the clinical features and pathological physiology of the kidney. Accurate diagnoses and satisfactory methods of treatment are to a large degree dependent on such added information. By the title of this paper no idea is meant to be put forward that I nor anyone else has any entirely new concept of Bright's disease, but I feel that it is impossible for most of us to keep up with all the newer ideas concerning this disease and for this reason it is fitting that periodically we have a résumé and rephrasing of the up-to-date concept of such a prevalent and important class of diseases as nephritis composes.

As to the classification of the various forms of the nephritides, I think that the following classification, taken from Elwyn and modified after Volhard, is the most satisfactory one:

A. Glomerulonephritis, in which inflammation of the glomeruli is the principal pathological process, with secondary changes in the tubules.
  1. Focal glomerulonephritis, in which only a fraction of the glomeruli are involved in a focal distribution.
    (a) The embolic focal glomerulonephritis.
    (b) The nonembolic focal glomerulonephritis.
      (Acute interstitial nephritis).
  2. Diffuse glomerulonephritis.
    (a) Acute diffuse glomerulonephritis, in which all the glomeruli are uniformly involved. This form either entirely subsides or passes into one of the following three forms:
    (b) Subacute diffuse glomerulonephritis.
    (c) Subchronic diffuse glomerulonephritis.
    (d) Chronic diffuse glomerulonephritis.
B. Nephroses, or degenerative nephritis.
  1. The nephroses occurring in the course of pregnancy, or simply, the kidney of pregnancy.
  2. Lipoid nephroses.
  3. The nephroses of amyloid disease or simply the amyloid kidney.
  4. The nephroses of bichloride of mercury poisoning, or simply the bichloride kidney.
C. The arteriosclerotic diseases of the kidneys.
  1. Arteriosclerosis of the renal artery and its larger branches, not presenting any distinct clinical picture.
  2. Renal arteriolosclerosis without renal insufficiency, with the clinical syndrome of benign hypertension.
  3. Renal arteriolosclerosis with renal insufficiency, or the malignant form of renal arteriolosclerosis, or the malignant form of hypertension.

Acute Nephritis.—There is almost complete unanimity of opinion that chronic nephritis develops from an acute phase which failed to heal completely, although frequently it is difficult and almost impossible to obtain a history regarding the acute phase. M. T. Cockburn, of Australia, emphasizes that acute nephritis may follow any childhood disease, not only scarlet fever, and that tonsillitis is a precursor in thirty per cent of the cases. Bronchopneumonia is a forerunner in a few cases, and as the author points out pneumonia may be a more important cause than realized because the nephritis is not often looked for. Most of the cases of acute nephritis occur in the autumn months when the weather is cold and damp.

L. M. Folkers points out that there was no sex difference in the incidence of acute glomerulonephritis in a series of sixty-eight cases. Respiratory infections were the most common etiological factor and scarlet fever was next in importance.

Winkenwerder, McLeod, and Baker studied the relationship between infection with streptococcus hemolyticus and hemorrhagic nephritis. They point out that cases with acute infections are able to react to the streptococcus hemolyticus and fortify themselves against infection. This defense mechanism leads to recovery. On the other hand, the patients with chronic infection do not have this power, and, as a result, infection persists and nephritis continues into the chronic stage. *The streptococcus hemo-*

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*Read before the Tennessee State Medical Association, Nashville, April 12, 13, 14, 1938.

lyticus must be related to the successive phases of the disease.

The geographical distribution of acute glomerulonephritis in North America compared to that of the distribution of acute rheumatic fever and scarlet fever was studied by Seegal and Jost. Scarlet fever and rheumatic fever were found to diminish progressively from latitude fifty to forty-five degrees to thirty-four to twenty-nine degrees. The frequency of glomerulonephritis did not vary significantly. Since the hemolytic streptococcus has been called the chief etiological factor in all three diseases, the lack of variation in the incident of acute glomerulonephritis is not understood. A special study of the southern hospitals proved the hemolytic streptococcus to be the main incitant of the disease.

There is a type of acute renal disorder which is receiving, and well deserves, more attention than it has been given in the past. Reference is made to acute nephritis occurring following a blood transfusion. The clinical phases of "transfusional nephritis" have been divided in four periods: (a) The period of alarm, with subjective symptoms occurring before the transfusion has been completed. In such cases renal complications seldom develop. (b) Anuria or oliguria lasting several days. (c) An inconstant hydric crisis, during which large quantities of water are occasionally eliminated by the kidneys. (d) The terminal period, during which genuine uremia sets in, sometimes causing death. The treatment, of course, is symptomatic.

I feel something should be said of so-called functional albuminuria, the pedonephritis of Heubner, which some authors have found so frequently that they feel it cannot really be called a pathological condition. Albuminuria has been found in as high as twenty-seven to thirty-eight per cent in children between ten and sixteen years old. It is more commonly found in the children of rich parents than those of the poor, and it is more common in girls at puberty than in boys; but, where it has been possible to follow up such children, mortality is no higher than in others; neither do they show any predisposition to kidney disease later in life.

As to the prognosis of acute nephritis, if the disease is acquired early in life, it is less likely to cause permanent damage or become chronic. Toxemia and cerebral edema are considered to be the two most frequent dangerous manifestations of the disease.

The prognosis of acute nephritis does not depend so much on the degree of renal failure as on the disturbance of cardiac function. According to Bettinardi, it must be assumed that changes in the heart muscle take place during nephritis. The nature of the changes is in question and only histological studies, which are lacking, can provide an answer. In the management of the case of acute nephritis the patient's convalescence and his ability to resume work should not be evaluated without the careful study of the heart.

As for the treatment of acute nephritis the fact must be borne in mind that there is more than merely renal inflammation to deal with, for acute nephritis is a disease not only of the kidney, but of the whole body. It must be remembered that acute nephritis is a sequel of acute bacterial infection and that the patient's energies have been sapped before the nephritis commenced. It seems well to emphasize that tardiness in the treatment of acute nephritis may result in the onset of the chronic phase and the treatment should always be directed at the patient as a whole and not just at the kidney. Warmth and rest in bed for four to six weeks are necessary. A simple general diet, high in sweets and low in salt, should be enforced; fluids should be limited to one pint of orange juice in twenty-four hours. If the blood pressure does not fall within the first week, venesection may be resorted to. When the blood pressure has gone down the diet may be increased, but should always be salt-free, and fluids should not be increased as long as there are any traces of edema. Secondary anemia often occurs and should be treated with iron. As to the surgical procedure of decapsulation, when acute glomerulonephritis fails to cure or becomes progressively worse under medical treatment, bilateral decapsulation, performed as soon as possible, might prevent the condition from becoming chronic.

Magnesium sulfate, ammonium chloride, and other diuretics are of little value, but potassium nitrate is not harmful.

The Nephroses.—The nephroses and particularly so-called lipoid nephrosis are having difficulty maintaining their identity in the modern classifications of Bright's disease. H. Elias states that on purely anatomical grounds the medical lesions of the kidney may be divided into three principal divisions: (1) degenerative processes which attack principally the epithelial cells and tubular apparatus; (2) the inflammatory processes; and (3) the sclerotic processes involving primarily the blood vessels of the kidney. To the first category belong the nephroses which are brought about by infectious diseases. Chronic lipoid nephrosis is due to some chronic infection such as syphilis, malaria, chronic rheumatism, or tuberculosis, or to the ingestion of chemical poison such as mercury, permanganate, or carbon monoxide. The poison may result from an autointoxication such as in pregnancy, diabetes, or goitre. Loss of albumin in these cases brings about the alteration in osmotic pressure with resulting edema.

In lipoid nephrosis the outstanding features are marked edema, normal blood pressure, absence of cardiac enlargement, high blood cholesterol, low blood proteins, inversion of albumin-globulin ratio and diminished basal metabolic rate. As for the treatment the patient should be confined to bed and carefully guarded against exposure and infection. Salt and water should be restricted and a high protein, low fat diet given. Urea as a diuretic is valuable. If that fails the mercurial diuretics may be resorted to providing there is no hematuria, hypertension or nitrogen retention. Iron will help to combat anemia and thyroid extract is often an aid. There seems to be some disagreement as to how much good gum acacia does in increasing the colloidal osmotic pressure of the blood plasma and decreasing the edema. I think that if other therapeutic aids have failed acacia should be tried, and the results are occasionally marvelous.

Chronic Nephritis. — Ofttimes patients with chronic glomerulonephritis are studied for a short time only, and during one stage of the disease, usually the advanced stage, when there is evidence of a well-developed renal insufficiency. A more continuous study of a patient over a long period of time usually furnishes some information about the course of the disorder that it would be impossible to gather in shorter periods of observation.

The protean character of the signs and symptoms of terminal hemorrhagic nephritis are outlined by I. H. Page. He points out the following: (a) An insidious onset means a fatal outcome. (b) The terminal stage may last for months. (c) Poor nutrition contributes to discomfort and ill-health, therefore *sufficient* protein should be given. (d) Salt restriction may relieve edema, even though plasma proteins do not rise above the critical level. If polyuria does not occur, salt restriction may be extreme without producing hypochloremia. (e) Even where the hemoglobin is not reduced, death may occur in uremia. Iron will not help the condition. (f) Arterial blood pressure may alternate between a high level and normal. (g) Eye ground changes may not be present until weeks or days before death. (h) Oliguria may last as long as eighteen days without producing marked symptoms. (i) An increased number of cells may be found in the pituitary gland at post-mortem.

H. Kahler states that there is not a single pathognomic symptom which is characteristic for any one of the various forms of nephritis. *A differential diagnosis* must rest upon the consideration of the entire clinical picture, together with the history and evolution of the present disease. Albuminuria alone is almost without significance in differential diagnosis. A moderate degree may persist for a long time without indicating that a severe progressive disease of the kidney is present. Similarly the presence of blood and casts in the urine has to be interpreted in the light of other findings. The relationship existing between the twenty-four-hour output of urine and its specific gravity is always of great importance. If the output is scanty and the specific gravity varies always from 1.011 to 1.013, contracted kidneys are almost certainly being dealt with. If by withholding water the specific gravity can be brought up to 1.025 or more, this fact speaks strongly against the existence of any serious kidney incompetency. An elevation of blood pressure does not necessarily prove the existence of kidney insufficiency, nor is it a uniform finding in kidney disease.

After the acute stage has passed infectious foci should be removed; if bacteria can be discovered in such foci, it is unconditionally advisable to have an autogenous vaccine prepared and to treat the nephritis by subcutaneous injections of this vaccine.

It is well to mention that high blood urea nitrogen may not always be due to chronic nephritis. Recent literature includes reports of high blood urea nitrogen not associated with chronic renal failure. A list of nonrenal conditions that may be responsible for elevated nonprotein nitrogen is as follows: (a) vomiting as in gastric cancer, pyloric spasm, toxemia of pregnancy, gastric tetany, acute intestinal obstruction, or acute peritonitis; (b) repeated gastric lavage; (c) diarrhea; (d) cerebral hemorrhage; (e) reflex anuria; (f) diabetes mellitus; (g) extensive burns; (h) pancreatic necrosis; and (i) infectious diseases. The differentiation between chronic glomerulonephritis and nonrenal azotemin is pointed out. If the nonprotein nitrogen and urea nitrogen values are high, blood chloride values are apt to be diminished and the carbon dioxide combining power of the blood plasma increased. The nonprotein nitrogen content of the blood is the result of three factors; *i. e.*, the rate of protein breakdown in the body, the concentration power in the kidneys, and the amount of water secreted. With a great protein destruction, as in emphysema or lobar pneumonia, the nonprotein nitrogen may rise when the kidneys are normal, especially if the water excretion and intake are slight.

As for kidney function tests it must be emphasized that no renal function test is a true measuring stick in diagnosis and prognosis, for extrarenal factors, such as anemia and heart disease, at times, play an important part. The distinction between focal and diffuse glomerular nephritis has become of doubtful value since impaired renal function has been demonstrated by the urea clearance test in the so-called focal cases. Of the commonly used renal function tests in clinical medicine, the urea clearance test and Volhard dilution and concentration test are the two most reliable.

As for the treatment of nephritis Roper states that there are three groups of "medical" kidneys, *i. e.*, degeneration, inflammatory, and vascular or arteriosclerotic. The arteriosclerotic is due to diminished blood supply in essential hypertension. The treatment, therefore, is directed at circulation. The main class of the inflammatory group is the diffuse nephritis occurring as a sequel to some bacterial infection and is a result of toxins attacking every nephron. Diminished blood supply because of vascular blockage leads to lowered urinary output and greater permeability. There may be a "silent period" between acute and chronic phases, or the transition may be a gradual merging of the acute into chronicity. In treating inflammatory nephritis nitrogenous foods should be cut down to avoid retention of their waste products. Water restriction is advisable if diuresis is satisfactory. In the acute forms of nephritis diuretics should not be used.

Nephrosis is the purely degenerative process. Albuminuria and consequent edema are the only signs. Renal edema is treated by diet high in protein, diuretics, urea, and salyrgan. In chronic nephritis the edema may be mixed in origin and full investigation is necessary. The theory that a disorder in chloride metabolism causes edema is no longer tenable. However, salt is retained in the tissues, and a salt-free diet should be imposed in cases of edema. Oliguria should not be treated by increased fluid.

Back to the *high protein diet*—I do not consider this to be harmful. Such diets are beneficial in all kinds of nephritis except in those kinds in which the products of nitrogen metabolism are retained in the blood stream.

Frequently diuretic drugs are necessary to reduce edema. Xanthine diuretics, as a rule, are of little use, but mercurial diuretics are usually effective and, as a rule, cause no renal irritation. Urea in large doses is an efficient diuretic if it can be tolerated by the patient. Intravenous injection of fifteen per cent gum acacia is often an excellent diuretic.

The Nephrosclerosis.—The view is expressed by many that there are two types of essential hypertension, designated the "red" and the "pale" types by the Germans. In this country the terms benign and malignant are used to express the same disorders. Malignant nephrosclerosis from the clinical and pathological standpoint should *not* be looked upon as merely a progression of benign nephrosclerosis, but rather as a distinct disease. Some people feel that these two types are both stages of one arteriosclerotic process, differing from one another not in type but in degree.

In reviewing the recent literature on the subject of Bright's disease one cannot help but see that the most outstanding work has been done in the field of the treatment of hypertension. Interest in the field of work has been stimulated by surgeons who have attempted to control hypertension by operations on the autonomic nervous system. They assume that hypertension is caused by peripheral vasoconstriction and that by cutting the controlling sympathetic fibers the peripheral constriction is overcome.

M. Prinzmetal and C. Wilson worked on hypertensive patients and by studies on the blood flow in the arms under various conditions, using the arm plethysmograph, they were able to draw certain conclusions: (1) The increased vascular resistance in different types of hypertension is not confined to the splanchnic area, but is generalized throughout the nervous system. (2) Increased fiber resistance is due to hypertonus and not to organic changes in the vessel wall. (3) This hypertonus must be regarded as intrinsic spasms of the blood vessels themselves and is dependent on vasoconstrictive action. (4) All types of hypertension, the benign, the malignant, and the renal, are produced by the same type of mechanism. (5) In the type of hypertension studied it appears that normal vasoconstriction is superimposed on an intrinsic vascular hypertonus leading to acute elevation of blood pressure. (6) Surgical procedures aiming at the relief of high blood pressure by sympathectomy do not abolish vascular hypertonus which is responsible for the high blood pressure. They merely remove the superimposed vasoconstriction.

The efficacy of medical treatment of essential hypertension was reviewed by Palmer. The 169 patients studied by him were classified according to age and the degree of hypertension. In the mild form of the disease ninety per cent of all ages either have no symptoms or are easily relieved. In the moderate form there is a fifty per cent chance of a fall in blood pressure in all age groups and seventy-five per cent can be much relieved. In a patient under forty-six years of age radical therapeutic measures must be considered, since in this age the malignant form occurs most commonly, especially among females. Medical treatment in this condition is of no value and any surgical help giving symptomatic relief is most welcome. In the group over forty-six a fall in blood pressure is possible in one-third of the cases and symptomatic relief in forty-six per cent. The vascular changes are irreversible and surgery will do no good.

Among the various surgical procedures advocated for the treatment of hypertension are: (1) splanchnic nerve resection combined with removal of the lower thoracic sympathetic ganglia; (2) bilateral resection of the roots of the splanchnic nerves with resection of the lower sympathetic chain; and (3) denervation of the adrenal glands along with division of the splanchnic nerves.

Investigators and clinicians who know most about the subject of hypertension believe it is too early to make any sweeping conclusions regarding these surgical measures in the treatment of hypertension. Whether or not they prove eventually to be of value, they at least have augmented knowledge of the processes involved in the production of hypertension. Surgeons have stimulated others to think more carefully and clearly about the possibilities of therapeutic agents in chronic hypertension.

CONCLUSIONS

1. The classification of nephritis has not changed much from the original one of Elwyn modified by Volhard.

2. All cases of chronic nephritis originated as acute nephritis.

3. The streptococcus hemolyticus must be related to the successive phases of the disease.

4. The periods of so-called "transfusional nephritis" are enumerated.

5. The so-called functional albuminuria of children cannot really be called pathological.

6. It seems likely that pathological changes in the heart muscle occur during the stage of acute nephritis.

7. A low salt, well-rounded diet is advisable in acute nephritis while in the nephroses and in cases of chronic nephritis the diet should contain sufficient protein.

8. High blood urea nitrogen does not always indicate nephritis.

9. The treatment of the vascular forms of diseases of the kidneys has not progressed very rapidly, however, with the newer surgical procedures there has been added new stimuli to think more carefully and clearly about the possibilities of therapeutic agents in chronic hypertension.

DISCUSSION

DR. J. O. MANIER (Nashville): Mr. President and Members of the Tennessee State Medical Association: Dr. Hartung's very excellent paper covers such a wide range of thought in reference to the present-day concept of nephritis that one in discussing it in the time allotted can only approach it in a general sense and possibly reemphasize certain particular points which from a practical approach are of more than passing interest. Bright, in his original papers published between 1827 and 1843, was the first to note the occurrence at the same time of kidney disease, albuminuria, edema, and cardiac hypertrophy, the latter being indicative of existing hypertension. As the years have passed since his contributions, attention in different eras has been focused on widely varying aspects of this disease, such as, for instance, urinary findings, renal function, etiology, the trend of development of once established pathology in the kidney with the passage of time, and many other factors too numerous to mention. Many classifications, simple and involved, have been offered in an effort to clarify and render practical our clinical conception of this somewhat involved disease.

Out of these efforts have emerged a few fundamental facts, the acceptance of which is now more or less general. Prominent among these is the more or less universal conclusion that the disease we now describe as nephritis is not a pathological process or entity localized in the kidneys alone with secondary manifestations in other organs of the body, but rather a general constitutional disorder, the full picture and ramification of which we do not even as yet entirely understand. Furthermore, pathological study and research have shown that the fundamental abnormal morphological changes that occur in the kidney in Bright's disease may be inflammatory, degenerative or vascular, any one or all of these in varying degrees and acuteness in individual cases. It is the acceptation of these fundamentals plus the information furnished by renal functional tests, and the observation that edema, elevation of blood pressure, anemia and uremia may occur in certain types of nephritis in part or whole and not in others that justifies Dr. Hartung's suggested very satisfactory classification of this disease.

There can be no doubt that chronic nephritis in terms of the classification offered is almost entirely a sequel of a preexisting acute nephritis and that the primary acute phase is the aftermath of some one of the acute infections, most commonly some of the streptococcic diseases. There is, however, no unanimity of opinion the world over as to just which of the infectious diseases is the most predominant etiological precursor. Suffice it to say that almost any acute infection may at times occasion a degree of acute nephritis and that the acceptance of this fact should make us all more careful to look for evidences of renal damage in the face of even mild infections. My own experience wth acute nephritis has tended to incline me to assign the most important etiological role to acute upper respiratory infections rather than to formal tonsillitis, scarlet fever, etc. Certainly the widespread incidence of respiratory infections justifies more attention to their etiological relationship to acute nephritis, not only as a primary initiating factor, but also as an agent which at times without doubt occasions an acute relighting up of a preexisting acute nephritis which may never have entirely subsided, but which may at the time be in a mild chronic symptomless latent phase. Were we as physicians able to have our patients who have an upper respiratory infection pursue a more sensible and prolonged convalescence than twenty-four hours' freedom from fever, no doubt some instances of acute nephritis might be prevented.

No discussion of nephritis should omit some reference to the restriction in dietary proteins, a principle of treatment still carried to a harmful degree by many members of our profession as soon as hypertension is encountered or albumen found in the urine in any amount irrespective of what the pathological change in the kidney may be. There is, on the one hand, no occasion to feed a nephritic an extremely restricted protein diet unless such patient shows a definite restriction in the ability of his kidney to excrete the end products of protein metabolism as evidenced by high ascending blood nitrogen values. The nephritic as well as the normal individual needs a certain amount of protein intake to maintain his nitrogen balance, and one should not overlook the further fact that proteids are an essential to the repair of damaged tissue and in the presence of this practical absence in a dietary reparative processes can only be retarded.

Furthermore, in the nephroses the edema present is largely due to the tremendous losses of albumen from the body in the urine and the resulting departure from normal in osmotic pressure relationships and the altered albumen globulin ratio. In these instances, little or no improvement may be expected in the distressing edema often present unless not only protein, but oftentimes unusually large amounts are included in the dietary of the patient.

Functional or orthostatic albuminuria is more often observed in youth or the age of growth and development, and one can but wonder how many young people with this particular type of albuminuria and no definite renal pathology may have been retarded in their normal growth and development by the arbitrary and needless removal of a necessary item of a well-balanced diet.

The constant daily use of drastic purgatives as an auxiliary to diminished renal elimination, the result of impaired renal function, is only mentioned to be condemned. Occasional purgation has its rightful place, but daily large doses of magnesium sulphate serve no useful purpose, but only make an already weak and unhappy patient more so.

By proper management and sound judgment some cases of acute nephritis may recover and the unhappy state of the chronic nephritic can be rendered less unpleasant and his days prolonged. It is my earnest hope that we may approach these perplexing problems more sanely as our knowledge and judgment improve.

DR. C. A. HARTUNG (closing): I appreciate this excellent discussion of Dr. Manier and I just wish to emphasize two points. Acute nephritis is a disease of the general body and not necessarily localized to the kidney. Second, do not restrict proteins unless there is definite evidence of increased blood urea and the end products of protein metabolism.

SELF-INFLICTED SKIN LESIONS*

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THIS DISCOURSE on self-inflicted skin lesions includes a discussion of neurodermatitis, neurotic excoriations, and dermatitis factitia, as well as a brief review of other skin diseases that have been aggravated by scratching and by the use of strong local remedies.

Neurodermatitis is usually a localized, leathery, thickened condition of the skin caused by scratching and rubbing. However, it may occur as a widespread eczematoid eruption. The individual develops a pruritic area on his skin and persists in scratching until the skin becomes thickened and indurated. In most cases nothing can be seen except a dry, papular, leathery patch. This condition occurs most often in high-strung nervous people who are overworked and have important responsibilities. In many instances it is preceded by a dermatitis or some other skin disease and the use of strong medicine and repeated scratching cause a thickening of the skin with the production of a well-developed neurodermatitis.

Many cases of so-called eczema, especially the type described as squamous eczema, belong in this group. Frequent locations are the wrists, the elbows, the sides of the neck, the upper eyelids, the back of the neck, the hair margins, the backs of the ears, the inner surface of the thighs, and the ankles. A great many of the cases of pruritus of the anus and vulva come under this classification. The patients become nervous and have an uncontrolled desire to scratch and the more the region itches the more they scratch and the more they scratch the worse it itches. This vicious cycle makes the condition more vexatious.

Neurodermatitis is frequently seen on the upper eyelid as a sharply outlined, thickened, slightly discolored patch. It may be fingernail in size or it may cover the entire lid, as is seen mostly in women. Many cases originate as a cosmetic dermatitis which is made chronic by repeated daily scratching and rubbing. They frequently wake themselves frantically clawing at their eyes.

Cases of urticaria and scabies are frequently seen with deep abrasions as the result of scratching. Simple conditions are sometimes treated with irritating applications which increase the pruritus; and scratching results in excoriations that may become infected. A Negro man was recently seen with a severe crusty, weeping eruption involving the entire leg. He stated that the leg had been injured by striking a chair and that every household remedy recommended by his friends had been used. A simple abrasion had been transformed into a severe self-induced ulcerated, pustular dermatitis.

Infantile eczema is frequently made worse by scratching and many cases are classified as disseminated neurodermatitis. A baby's hair is often rubbed off by constant friction against the pillow or sheet. The face may be injured in a similar manner, or by the use of fingernails.

Many of these cases have unstable nervous backgrounds. They are restless, overworked, and high tension subjects and are frequently described as having neurocirculatory instability.

A woman, forty-two years of age, who had lost her home and whose economic station had been reduced to a lower level, is a good illustration. She says that when one of her four children asks for something that she is unable to supply, she wants to "explode" and her nervous system seems to "blow up." She develops a general pruritus and begins scratching. Her home was lost two years prior to the onset of this severe, more or less generalized, neurodermatitis. Large excoriated patches on her wrists, forearms, arms, neck, upper chest, legs, and thighs were prominently displayed.

Neurotic excoriations are seen in individuals with an unbalanced nervous mechanism. The lesions are small oval-shaped or irregular excoriations, usually seen on the face, neck, scalp, and arms, but may appear on any accessible part of the body. With the imagination that the skin contains foreign substances such as grains of sand, attempts are made to remove them with the fingernails or with sharp instruments. The belief is prevalent that parasites and various microorganisms are present in the skin, and this conviction gives them a desire to pick at it. Such lesions are also ascribed to a nervous habit of picking at various pruritic parts of the skin. Young girls and boys occasionally pick at blackheads on their faces, giving rise to small denuded areas.

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*Read before the Tennessee State Medical Association, Nashville, April 12, 13, 14, 1938.

A number of restless, impetuous men induce abrasions on the face by picking at "ingrowing" beard with the fingernails or with small forceps. Some of them carry forceps in the pocket for use at spare moments. A lawyer from a neighboring town had a habit of going to the barber at regular intervals to have some of his beard removed with forceps. This instance was recently related to a patient who had a similar facial complaint. With a guilty smile he reached into his pocket and produced a pair of forceps. These patients complain of itching and feel that relief can only be obtained by removing "ingrown" hairs.

Another peculiar type of individual is one who picks at his scalp. In some instances the excoriation is so deep as to destroy the hair follicles, causing permanent loss of hair. Others pick at one point until a calloused area appears. A man who has been under observation for some time has several of these calloused areas, and large fields of short stubby hairs that have been broken off or worn away by scratching and rubbing. He seems to get a great delight in running his fingers through his hair and feeling for the bony sutures, which he outlines with a degree of accuracy.

Dermatitis factitia is usually induced by painting the skin with strong escharotics or by destroying the skin with sharp instruments by the patient himself or by a confederate. The lesions vary from a superficial area of destruction to gangrene, extending through the entire thickness of the skin. The lesions are bizarre in arrangement, frequently appearing in linear disfigurement and in easily accessible locations. The palms, soles, eyelids, scalp, genitals, mouth, nose, and ears usually escape. The severity depends upon the strength of the chemical and upon the length of exposure. The lesions are sharply outlined, and frequently a line extends downward from the main lesion such as might be produced by the trickling of fluid to a dependent portion. The patient's complaint and exaggeration of symptoms are usually out of proportion to the indication. This condition occurs most often in neurotic or hysterical individuals, but may happen in a person with a normal nervous system who desires to defraud, to escape trial, or to enlist sympathy. Hysteria plays an important role in many cases, while in others, a specific motive cannot be established.

A Negro woman, twenty-eight years of age, was referred by a lawyer for examination in 1924. She had brought suit against a large utility company for alleged damages sustained by an electric shock incurred while pulling a metal chain on a chandelier about a year before. A dark, ribbonlike, discolored band extended from the right wrist up the forearm and arm to the shoulder. It had a distinctly artificial appearance with a sharp outline such as might be produced with a paintbrush. The process of healing had left a pigmented stripe containing many depigmented islands. A splotch of similar nature was found on her right breast and the calf of her right leg. There were no scars at the natural contact or ground points. Evidently this was a case of disfiguration for the purpose of fraud.

A white man was once seen in consultation at a local hospital who had a series of superficial erosions and ulcers, rectangular or oval-shaped, arranged in parallel lines extending from the ankles to the knees of both legs. After persistent questioning he admitted that he was to appear for trial the following week charged with murder.

A brief history of a white man, thirty-seven years of age, with an unusual ulcer on the back of his hand is considered of interest. The tip of the fifth finger had been lost in machinery of some kind while in the employ of a large corporation. The hand had felt numb and dead ever since and at the same time he complained of excruciating pain extending up the forearm and arm. An ulcer soon appeared which would not heal. At the time of examination the hand and forearm seemed to be perfectly anesthetised, but no other neurologic findings could be obtained. He did not show any evidence of pain while the ulcer was being thoroughly cauterized without anesthesia. He would not allow a permanent dressing to remain long enough for healing. After several months he attempted to amputate the arm above the elbow with his pocketknife and succeeded in causing sufficient damage to make amputation obligatory. This case is classed as hysterical, although the desire to recover compensation may have been a motive.

A most interesting case was referred for consultation in 1936. A white girl, nineteen years of age, had received an injury to her forearm five years previously. Several conflicting stories had been related as to the origin of this peculiar disorder. One allegation was that her father had come home one night intoxicated and slapped her. She fell against a chair, striking the left forearm just below the elbow. It became swollen, ecchymotic, and painful. This condition persisted, almost disappearing at times, but soon reappearing with its original intensity. Having had a radiographic diagnosis of periostitis, a prominent surgeon incised the forearm and exposed a normal bone. The wound healed and the unusual skin and subcutaneous manifestation migrated more to the dorsal side of the forearm away from the scar. This condition had persisted, and during the last two years blood began to appear suddenly on the skin at frequent intervals. Upon mopping the blood away the skin was found to be in perfect contact and without bleeding points. She had been examined by more than twenty physicians. A thorough examination had been made in a prominent institution and an elaborate opinion had been given. The opinion was advanced that this was either an odd form of vicarious menstruation or an allergic condition associated with localized vascular weakness caused by injury. The diagnosis of dermatitis factitia from the above history was verified by subsequent events. It was probably induced for the purpose of creating sympathy or of causing her father to regret his unscrupulous act. The first time the patient was seen blood could not be demonstrated, but a few days later she reported presenting an oval-shaped bloody area on the forearm. It had the appearance of a ropy, bloody mucus containing air bubbles and was about the size of the open mouth. She was chewing gum and the inference was that she could produce this secretion either by injuring the mucous membrane with gum, or by sucking at the gingival mucosa. It could be readily transferred to the forearm. Her physician was advised to apply a plaster cast for two weeks, and the unusual condition disappeared completely. She was advised that exposure would be withheld provided that it did not recur, and thus terminated a puzzling problem. This case illustrates the extreme degree of hardship these patients are willing to undergo in order to attain an objective. She had been examined many times, had one major operation, and voluntarily offered to submit to further surgery.

The treatment of these cases is a problem of general medicine, psychiatry, and dermatology combined. Rest, shorter working hours, regular vacations, dietary regime, sedatives, antipruritics, and common sense advice enter into the field of therapy. Dressings that protect the pruritic field from scratching are beneficial. Elastoplast offers a good dressing for dry isolated patches. A warning against scratching is of aid when heeded. Radiation therapy is a good antipruritic and probably stimulates the growth of new epithelium. Babies with eczema may be prevented from scratching by the use of splints at the elbows or by fixing the wrists to the napkin with pins and bandages. Numerous cases of neurodermatitis can be prevented by the avoidance of the use of strong applications. In case of doubt, it is well to employ soothing, harmless remedies.

DISCUSSION

DR. J. L. GILLEN (Chattanooga): I am sure we enjoyed Dr. Hamilton's paper very much. The diagnosis of self-inflicted skin lesions is at times difficult to make, not only because they simulate many types of lesions, but also because usually we are dealing with an uncooperative person who attempts to mask the nature of such lesions.

Artificial injuries appear suddenly and are usually symmetrical. Left-handed persons generally have the lesions on the right side of the body and vice versa. The lesions are sharply defined and of abnormal dermatological shape, irregular and angular in outline, linear necroses in a healthy surrounding area.

The eruption may be due to a drug, as chloral hydrate, or bromides, which the patient denies to have taken. He may know that he has an idiosyncrasy toward a certain drug and may take advantage of this. Relatively harmless chemicals such as tooth pastes, perfumes, face powders, etc., may cause eruptions.

If alkalis or mineral acids were used, the main lesion is often surrounded by numerous scattered small necroses due to splashing of the acid over the skin.

A patient suffering from a genuine skin eruption and under treatment may secretly counteract the treatment or render the eruption worse.

The facies of the neurotic, the hysterical and the malingering patient is often an important aid in diagnosis.

The motivation of the malingerer may be moral, religious, intellectual, economic or sexual stress. The subjects of these various manifestations are, for the most part, hysterical or neurotic persons and criminals, soldiers, and others desiring to be relieved of their duties, but also it is frequently a manifestation of nervous individuals who produce excoriations of the skin with no desire or intention of deception.

From a legal standpoint this type of condition is important. Many compensation claims have been needlessly paid to cover artificial injuries to the skin which have been made to look real by a malingerer who is clever enough.

Self-mutilation, whether malingerous or impulsional, should excite a sympathetic but firm and studied consideration of the patient's mental processes, moral, and emotional failings and functional inadaptabilities.

DR. A. H. LANCASTER (Knoxville): Self-inflicted lesions of the skin as dealt with by the essayist make up a large percentage of the dermatological patients seen in a routine practice.

Many writers like to use the word dermatitis factitia for self-inflicted diseases of the skin, and the name carrying with it a dermatitis produced for the purpose of gaining compensation either in the form of attention, sympathy or money. These patients are mental problems as well as dermatological problems. They use strong chemical or mechanical agents to produce such lesions. The most frequent chemicals are acids and strong caustics, even draino (a substance for cleaning out kitchen sinks) has been used successfully by one of my patients at intervals for about four years to gain sympathy from her husband and attention from a group of doctors and friends. She was so successful that she received three operations. A very unusual mechanical agent used by one of my patients was the metal on the end of a pencil after the eraser had been removed. She used it to cut plugs of skin out of the left forearm and thigh. The pencil was recovered with a piece of skin remaining in the metal. Most of these patients are females and of the adolescent or menopausal age.

The management of these patients is a problem which taxes the skill of the best therapist and offers a place for the practice of psychiatry.

The next group of patients which I shall discuss with self-inflicted lesions are the ones who are striving to benefit themselves by medication. Many of these patients are using an advertised cure for eczema, the scrap heap of dermatology, itch cure, or a cure for the great commercial disease "athletic feet." After receiving a diagnosis and prescription from their physician, they soon discard it and try an advertised guarantee, "cure or money back," handled by their nearest drugstore.

Many of the so-called specifics which we use in dermatological practices such as ammoniated mercury for impetigo, sulphur for scabies, and others, in spite of being specific for the malady prescribed often leave the patient with a dermatitis which not only continues, but gets worse until the cause is recognized and corrected. I had the occasion last month to see a patient from a neighboring state who had a vesicular dermatitis for eighteen months, following the treatment for impetigo with ammoniated mercury. I believe that fully ten per cent of my patients get a dermatitis of some degree from the use of sulphur in scabies and often make the mistake of continuing the sulphur for a prolonged period before returning for observation or a change of medication.

I have had an occasion to observe a very interesting group of patients this winter, who, after having arsenical dermatitis, are not able to take cold capsules containing aspirin and phenacetin, although before having arsenical dermatitis they had taken them without harm and one of these patients took only aspirin and within thirty minutes was well on the way with a return of exfoliative dermatitis. One of these patients had his arsenical dermatitis eight years ago and is still unable to take "cold" capsules. This observation I believe can discredit or throw some light upon the supposed recurrent arsenical dermatitis of a mild degree and short duration, developing many years after the attack of real arsenical dermatitis.

The successful management of most of the conditions referred to by the essayist are not only trying on the physician, but require an intelligent and cooperative patient.

Drs. King and Hamilton have brought us a very interesting paper and one that is deserving, not only of reading but of study, if we are interested in dermatology.

I wish to thank the essayists for the privilege of reading and discussing their paper as well as you for your patient attention.

DR. E. R. HALL (Memphis): The longer I practice medicine the more I am convinced that I should take a course in psychiatry or a course such as given by the United States government to the G-men, probably leaving out the target practice.

There are two conditions which are most properly discussed under this title. Neurotic excoriations and dermatitis factitia or feigned eruption both due largely to a derangement of the nervous system and occurring most frequently in women. In the first condition there is an uncontrollable desire to remove some supposed foreign body or obtain relief from itching. It is most frequently seen on face, neck or any place readily accessible to the hands. Habit is also a factor in these conditions; we see patients with acne that have developed a habit of picking at their face, knowing full well that they will intensify the scarring. Twisting of the hair, biting the fingernails, picking the back of the neck, all have a similar etiological background.

Dermatitis factitia occurs more frequently than might be expected. In practically all cases there is a desire to deceive for one reason or another. It may be to gain sympathy, pity or attention from some particular individual, to escape from disagreeable duties or surroundings, a desire to remain in the hospital or obtain compensation for some injury.

The diagnosis is not so difficult to one familiar with cutaneous disorders, since the lesions differ from those of any recognized disorder. To determine the reason for this self-inflicted condition and the agent used may require the astuteness of a well-trained detective.

DR. HOWARD KING (closing): Mr. Chairman and Members of the Association: I feel that most of you as general practitioners and surgeons do not appreciate how often such things occur as Dr. Hamilton discussed with you here today. Practically every day of the world we see a case falling in the category of this discussion. Man is a creature of habit. I imagine that Adam and Eve had some funny habits, if we could go back and review them. If every one of you when you go home will make a close study of your personal affairs, you will find that you are addicted to some peculiar little habits of your own, such as biting your fingernails, pecking on the table, playing with a pocketknife, plucking at your hair, scratching a certain part of your body unconsciously. We are living in times of economic stress and advancement of the world; we are living in a wonderful age, we Americans in particular; we are living in the age of radio, of telephone, of the airplane; we are living a fast life. We do not live right, we do not eat right, we do not sleep right, we do not exercise right. Therefore, very few of us have thoroughly normal, stable nervous systems. Most of us have some peculiar little habit.

Two or three years ago I noticed that I could not read a newspaper without my hand automatically getting to my scalp and picking at it, and I thought, "I believe you are one of those fellows." I made a study of myself for a while after that and discovered that every time I would read the newspaper I would be picking at my scalp, so I broke myself of the habit.

It is not always a patient who is hysterical or excitable; it may be an individual who under ordinary social conditions is as calm as can be, one who is totally unsuspected, and yet that individual will be given to some pernicious little habit which creates on himself a skin disease.

Most of these patients who reach us have been dieted. The family physician would not let them eat sweets or tomatoes or what not. Of course, you never in the world will get anywhere treating the patient in that way.

Dr. Hall made a very timely comment that we doctors, especially dermatologists, ought to have a course in psychiatry. It is interesting to question these individuals who come in with these self-inflicted lesions and to go into their daily lives, their little habits, and frequently you will find there is some tremendous thing at work in that individual's mind back of the whole thing, and you have to get his thorough cooperation and get him to tell you about his troubles or his misfortunes and talk about them because he will never get well until you approach it from that standpoint.

One of the most interesting cases I have ever known was this recited about the young lady who for five years would present herself with bloody dressings on the forearm, and who had seen twenty-two doctors, all of them making various diagnoses; she had been through a clinic, had had all kinds of tests made of the blood and every part of the system, and finally had an operation. This individual was practicing pure deception. Of course, this is a different thing from neurodermatitis. After a casual examination it was inconceivable to Dr. Hamilton and myself that a person could stick her arm out with a perfectly normal looking skin and make blood exude from it. Every time that she had appeared in a surgeon's office she had produced the bloody discharge, but the first time she appeared at our office she was unable to do so. The second time she appeared she did produce this discharge in the presence of her mother who evidently was a confederate. When we inspected the discharge it was so evidently a salivary mixture with blood that it was almost laughable. It was very interesting to realize that this patient had practiced such deception with all these doctors for a period of three to five years. There are a good many individuals of this type.

That last photograph of the patient with the lesion on the abdomen, who was out at St. Thomas Hospital just a few days ago, was of an ignorant, neurotic sort of woman who had had an operation for goitre. Of course, she had plenty of background.

NEAR DEATH WHILE SWIMMING, DUE TO ALLERGY TO HEAT AND EFFORT

Glenn D. Grubb, M.D.,* Knoxville

RECENT WRITERS on the subject of physical allergy have found references to abnormal responses to physical agents, especially cold, in the literature as far back as 1860. During the interval from 1860 to 1923, when Duke[1] associated these strange phenomena with allergy, less than twelve writers had described cases.

Duke in his original report in 1924 coined the term "physical allergy"; he associated other physical agents as heat, light, effort, and trauma with cold as etiological factors in obscure cases and described the local reactions (symptoms at the site of contact) and reflex-like reactions (symptoms remote from the site of contact). He described therapeutic measures. Since his original report, Duke has made many contributions to the literature.

Horton and Brown[2] in 1929 reported six cases exhibiting both local and general reactions from exposure to cold. These writers described in detail both local and general symptomatology. They obtained excellent results with hyposensitization by the immersion of the hand in cold water.

More recently Horton, Brown, and Roth[3] have reviewed the literature on the subject and have described their new method for testing for cold sensitization. Morey and Michie[4] in 1930 reported in detail a case of urticaria due to heat and exhaustion or both which was eighty per cent relieved by subcutaneous injections of histamin. These writers were unable to establish atopy in their case.

Alexander[5] in 1931 reported the case of a lady fifty-three years of age who had been subject to urticaria for twenty-five years, brought about by moderate exercise or overheating. Good results were obtained by immersion of the hand in water at gradually increasing temperatures until symptoms disappeared. He was unable to do the usual allergic tests on the patient due to dermographia. Alexander infers that the mechanism underlying wheal production can be exhausted by prolonged exposure to the excitant.

Henry[6] reported a case of urticaria due to effort and heat which was relieved by strenuous exercise (playing basketball).

Bray[7, 8] in 1932 and again in 1933 reported some cases of allergy to cold. He obtained good results by subcutaneous injections of histamin. This writer demonstrated local eosinophilia at the site of the reaction.

Swineford and Wienberg[9] in 1933 reported a case of extreme sensitization to heat. The patient was relieved by intravenous injection of typhoid vaccine. Swineford[10] in 1935 reported the role of physical allergy in 325 routine allergic cases. Physical allergy initiated the chief complaint in ninety-five and was a complicating factor in 106. In only three cases was physical allergy the chief excitant.

Physical allergy tests have been made at the Vaughan-Graham Clinic since 1932. Upon reviewing the records, I was unable to find a single case of physical allergy in which atopic allergy was not also established. This is contrary to Duke's original report that physical allergy is not as a rule associated with atopic allergy. The writer's observations have been that physical allergy is a complicating or associated factor.

The following report exemplifies our experience with physical allergy and is of especial interest as insofar as I know no one has ever reported a case of near drowning due to allergy to "heat and effort."

Case Report

Housewife, age forty-four, seen January 23, 1937.

Chief Complaint.—Hives.

Family History.—Father died at age of sixty-three from pneumonia; mother died at the age of seventy-one following an operation. One brother died at the age of forty-nine with "Bright's Disease." Three brothers and sisters living and well. There is no history of allergy in the family.

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*From the Vaughan-Graham Clinic, Richmond, Virginia.

Past History.—Patient had usual childhood diseases without complications. The tonsils and appendix had been removed six years previously. She has had hay fever in May and June for several years.

Present Illness.—For the past ten years she has been subject to hives. She first noticed her trouble while playing golf in the hot sun. She immediately sat down in a cool place, and within a few minutes the wheals had completely disappeared. Since that time she has had hives following effort, after bathing in warm water, and on wearing too many clothes in winter. The hives are much more severe in summer than in winter. She could not expose her back to actinic rays to the extent of wearing a bathing suit, or be on the boardwalk at Atlantic City in the summer without severe hives.

In 1935, while swimming in a cold New Hampshire lake, she had severe urticaria and near syncope, and did not fully recover for several minutes.

There was no history of food or drug idiosyncrasy.

Physical Examination.—The patient was five pounds overweight. Routine physical examination did not reveal any significant findings as far as the chief complaint was concerned. The blood pressure was 124/84.

Laboratory Findings.—Red blood count: 4,050,000. Hemoglobin: thirteen milligrams per 100 cubic centimeters of blood. White blood count: 5,970. Differential showed four per cent eosinophiles. Gastric analysis showed decrease in total acidity, but free hydrochloric acid was present. Urine analysis: essentially negative. Basal metabolic rate: minus five per cent. Vital capacity: normal.

The patient's tolerance to heat and effort was determined. After walking up one flight of steps, she complained of generalized itching, and within ten minutes, small urticarial wheals appeared over the major portion of the body. The same findings were noted following immersion of the hand and arm in water at 110 degrees Fahrenheit for ten minutes. No change was elicited by immersion of the hands in cold water.

Sensitization studies with the usual foods by the endermal method showed definite positive reactions to beet, spinach, oats, barley, onion, crayfish, shrimp, and chicken. The leukopenic index to wheat was border-line positive. Positive cutaneous reactions to the spring grasses were obtained.

She was directed to avoid the foods listed above, and the following regime was instituted. She exposed her hands in hot water at ninety-three degrees Fahrenheit for six minutes twice a day. The temperature of the water was increased by three degrees each day. When the temperature of the water was high enough to cause urticaria, the temperature was kept at that point until it no longer caused trouble. The patient carried out this routine, and in a period of six weeks she could take a tub bath at a temperature of 108 degrees Fahrenheit without trouble. The only time she was troubled during this interval was the first week of her treatment when she became excited at a social function.

On March 15 she returned to the office for retesting for physical allergy and for a leukopenic index to wheat and chicken. She was very fond of chicken. The leukopenic index to wheat showed a leukocytosis of more than a thousand cells, and was interpreted as negative. Although the leukopenic index to chicken was not definitely positive within six hours after the test meal, the patient was covered with urticarial wheals. She continued to avoid chicken.

On April 15, 1937, her physician reported to us that she had been completely free of trouble since March 16 except for one incident when she ate chicken gravy.

Discussion

The history of urticaria and near syncope from swimming in cold water suggested that the patient was also hypersensitive to cold. Tests showed her to be allergic only to heat and effort, as far as physical allergy was concerned. This attack was undoubtedly due to effort, even though her body was immersed in cold water.

Complete study showed that she was allergic to certain foods, especially chicken, and that this was an associated cause of her trouble. Physical allergy was the dominant excitant. Hyposensitization to heat was not in itself enough to give her relief when chicken was ingested. It was necessary to remove the atopic factor and to hyposensitize against the physical allergic factors in order to balance the allergic state.

The writer does not intend to infer that there are no cases of purely physical allergy, but to date none have been personally observed by him.

CONCLUSIONS

1. Physical allergy is usually associated with other allergy. The writer's observations are in accord with those reported by Swineford.

2. This case emphasizes the necessity for complete allergic studies, in spite of the fact that the diagnosis may appear obvious. Neither treatment for physical allergy nor avoidance of chicken alone would have given relief.

3. Collapse while swimming is amnestically attributed in this case to allergy to heat generated by effort. It is conceivable that some other factor not even necessarily allergic was responsible, but the fact that the episode was accompanied by another acute symptom, urticaria, makes the allergic etiology of the collapse probable. The patient's subsequent experiences with heat and effort which have been shown to cause urticaria together with our studies appear to further corroborate the conclusions.

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THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
Devoted to the Interests of the Medical Profession of Tennessee
Office of Publication, 508 Doctors Bldg., Nashville, Tenn.

Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 15, 1932.

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H. H. SHOULDERS, M.D., Editor and Secretary

JUNE, 1938

EDITORIAL

Graduate Medical Education

One of the great surgeons of America said some years ago that every doctor who reads as much as two hours a day will be a leader in his profession. This statement may be, to some extent, an exaggeration. However, there is no doubt but that a doctor's education never ends. He must learn every year or fail to keep pace with the progress that is taking place in the field of medicine.

Graduate medical education has therefore been the subject of serious consideration by organized medicine for many years. There are many forms and methods by which doctors may learn and be taught.

Current medical literature, of course, cannot be dispensed with as a form of postgraduate education. The same is true of books.

Medical society meetings, local, district, state, and national, are forms of postgraduate medical education. However valuable these meetings are, they are still not enough. More or less formal courses are offered in various institutions throughout the country, but these fail to reach an adequate number of doctors. The facilities will not accommodate a large number of doctors at one time. Futhermore, active practitioners find it impossible to leave their work for a long period of time. This is especially true of those who are located away from larger centers.

The idea of carrying postgraduate medical education to the doctors, in the field so to speak, was originated. Experience has demonstrated its value in certain subjects. Time and more experience may prove its value in teaching all subjects pertaining to medicine.

All the methods mentioned above are employed in Tennessee at the present time.

In 1936 the House of Delegates of the American Medical Association authorized the Council on Medical Education and Hospitals to make a survey of graduate medical education in the United States. Recently the council published a statement of the progress that has been made to date. It touches the work done in several states. The following paragraph is taken from the statement:

"In summarizing the impressions gained thus far, it may be said that there is considerably more activity in the extension type of graduate medical education than is generally appreciated. However, the need for systematic, continuous, scientific, and clinical instruction for practicing physicians is apparent, and since medical societies have recognized this need and have assumed responsibility in meeting the demands of the profession, it is hoped that their activities may be encouraged."

This finding has a far greater significance than appears on the surface. It is evidence of genuine loyalty on the part of doctors to the profession of medicine. It is evidence of a keen desire on the part of doctors as a whole to know how to do everything they may do that offers benefit to their patients.

We venture the assertion that no other group of people on earth devote as much time, expense, and effort to the task of keeping informed as doctors do. Notwithstanding all this, there are people who have never studied medicine and never studied patients, who know nothing of illness, and still would pose as authorities on questions of medical care.

The Survey of Medical Care by Organized Medicine

The survey of medical care which has been undertaken by organized medicine is of such importance that it deserves and must receive the thoughtful attention and cooperative effort of every doctor.

It is a stupendous undertaking, but nothing short of such an undertaking will yield information of the slightest value. Grossly inaccurate information could do much harm and no good. There is too much inaccurate information in circulation already.

Medical care has been the subject of discussion, investigation, and agitation for many years now. Much of the agitation is carried on by those who are committed to some revolutionary change in the system of medical practice in the United States.

Many of the investigations have been promoted by such influences.

It is obvious that the findings of these investigations, in many instances, are undependable and biased. Organized medicine is confronted with and committed to the task of finding out what the facts are.

The medical profession is charged with being an obstructive influence in the way of progress. This, of course, is not true.

Organized medicine is for progress, but we are for sane progress. We are in favor of taking successive steps in logical order and in the right direction. These steps must be guided, in large measure, by the facts revealed by the investigation now under way.

Several questions have arisen in connection with the survey. One is the difficulty of making an estimate of the amount of charity work done by doctors. Doctors are anxious to be accurate. It is fully appreciated that we cannot obtain figures which are absolutely accurate concerning the volume of charity work done by each doctor.

It has been suggested that each doctor make a record of the charity work he does in some one month. By multiplying this figure by twelve a fairly accurate estimate of the volume of charity work done in a year will be arrived at and not require a large amount of bookkeeping.

It is obvious that the volume of charity work will vary from month to month, but the method mentioned above affords a very definite and reasonable basis for an estimate.

DEATHS

DR. FRED CAMERON MCISAAC, 1874-1938

Dr. Fred Cameron McIsaac was born March 7, 1874. He came of sterling American stock and inherited those qualities.

His elementary schooling was received at Notre Dame School. His medical education was received at the Medical College of the University of Chattanooga. Following his graduation Dr. McIsaac entered the United States Marine Hospital at Evansville, Indiana, for his internship. Then he took a postgraduate course in medicine at New York University.

Dr. McIsaac started his practice in Denver, where he remained until the United States entered the World War. He saw twelve months' service overseas and was discharged with the rank of major. He held a commission in the Reserve Corps until his death.

For a number of years Dr. McIsaac was house physician at Erlanger Hospital. Dr. McIsaac was director of health for the city of Chattanooga for a number of years.

Dr. McIsaac was always deeply interested in the proceedings of this society and regretful that he could not take as active a part as he would have liked.

Resolved, that in the death of Dr. McIsaac this society has lost a member that upheld the best traditions of medical ethics, and also be it resolved that this obituary be spread on the minutes of this society and a copy sent to Dr. McIsaac's widow, Mrs. Ada S. McIsaac, as a mark of condolence.

W. A. REED, M.D.
H. P. LARIMORE, M.D.
E. E. REISMAN, M.D.
HERMAN RENNER, M.D.
FRED B. STAPP, M.D.
JOHN B. STEELE, M.D.,
Chairman.

Approved June 2, 1938.
A. M. PATTERSON, M.D., *President.*
J. MARSH FRERE, M.D., *Secretary.*

Dr. B. E. Delozier, Maryville; Lincoln Memorial University, Medical Department, Knoxville, 1906; age fifty-seven; died on May 9.

Dr. L. F. Loggins, Charlotte; University of Nashville, Medical Department, 1909; age fifty-four; died May 6.

RESOLUTIONS

IN MEMORIAM

The medical profession of Lawrence County and the members of the Five-County Medical Society deeply deplore the death of Dr. Clyde Hardison of Iron City, Tennessee, April 14, 1938.

Dr. Hardison received his medical education at the University of Nashville and began practice at Loretto, Tennessee, later moving to Iron City, where he lived until his death. When we entered the World War Dr. Hardison offered his services and was commissioned first lieutenant in the medical corps.

He served at Fort Oglethorpe, Mineola, Gordon City, Long Island, New York. He was discharged as captain. Dr. Hardison enjoyed a large practice and numbered his friends by his acquaintances. Your committee desires to recommend the following resolutions:

Whereas this society has lost one of the favorite members who always upheld its ethics and obligations of memberships, being an accomplished gentleman, an able physician.

Therefore Be It Resolved, That while in death of Dr. Hardison his family has sustained an irreparable loss, being loyal and true to his domestic obligations, yet they have the happy reflections of the many kind deeds which was his nature.

Resolved, That these resolutions be entered upon the minutes of the Five-County Medical Society, and a copy be sent to his wife with the deepest sympathy from this society. Also a copy be sent to the JOURNAL of the Tennessee Medical Society.

DR. T. J. STOCKARD,
DR. J. H. TILLEY,
DR. J. W. DANLEY,
Committee.

NEWS NOTES AND COMMENTS

This office recently received blank No. 9 for the use of pharmacists in the "Study of Need and Supply of Medical Care." The other eight blanks had been sent direct from Chicago to the secretaries of each county society. As we had no information about the number and distribution of pharmacists in the state we did not know how many of these blanks to send each county society. The Tennessee Pharmaceutical Association very kindly agreed to send these blanks to every one of their members with a request that the pharmacists supply the desired information and give the blanks to the secretary of the County Medical Society. In case the druggist did not know the secretary of the medical society he was requested to give the blank to some doctor who would see that the county secretary received it. The doctors are requested to assist us in getting these blanks from the druggist of their county medical societies.

WOMAN'S AUXILIARY

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Press and Publicity........Mrs. W. Frank Fessey
Nashville

As you read this, many of us will be busy with the closing up of the details of the past school year and with thoughts of the coming vacation time. Vacation time is the time for remembering old friendships and forming new ones. We will want to get acquainted with the great outdoors this summer, and surely we will want to read a few good books. Let us test the poet's reference to a "good book and a day in June," and let us reserve regular periods through the summer for spiritual renewal by direct communion with our Father. Such a vacation becomes a stimulus to our growth and sends us into the duties of the new school, social, or business year richer in spirit and clearer in mind for the things which lie before us.

RUTHERFORD AND CANNON COUNTIES

New officers and committee chairmen for the new year were elected at the regular May meeting of the Woman's Auxiliary to the Stones River Academy of Medicine held at the home of Mrs. Annie Youree at Readyville. Mrs. T. M. Smoot served as joint hostess.

Mrs. M. B. McCrary of Woodbury was reelected president; Mrs. S. B. Smith of Salem, vice-president; and Mrs. John Cason, secretary-treasurer. Mrs. McCrary announced the following standing committee chairmen for the year: publicity, Mrs. Matt Murfree; public relations, Mrs. J. B. Black and Mrs. J. F. Adams; public health, Miss Mary Hall; *Hygeia,* Mrs. B. W. Rawlins; cancer control, Mrs. J. A. Scott and Mrs. S. B. Smith; historian, Mrs. T. M. Smoot; legislative, Mrs. Youree; telephone, Mrs. W. T. Robinson and Mrs. A. J. Jamison.

Plans were perfected for the annual "Doctor's Day" celebration which will be in the form of a picnic to be held in June.

Interesting discussion was held of the new troop of Girl Scouts recently organized at Woodbury with twenty-one members and sponsored by the auxiliary.

DAVIDSON COUNTY

New officers for the coming year were chosen at the regular meeting of the Woman's Auxiliary to the Nashville Academy of Medicine and the Davidson County Medical Society held Friday, May 6, at the home of Mrs. J. Travenick, Jr., on Granny White Road.

Mrs. Travenick was chosen president; Mrs. T. G. Pollard, vice-president; Mrs. R. Z. Linney, recording secretary; Mrs. George Holcomb, corresponding secretary; Mrs. Lynch Bennett, treasurer; and Mrs. Harvill Hite, historian.

The business meeting was preceded by a luncheon. Hostesses were Mrs. Travenick, Mrs. B. F. Byrd, Mrs. George Carpenter, Mrs. W. W. Wilkerson, Mrs. Ruben Gayden, and Mrs. Paul Burks.

PERSONAL

Among Tennesseans in attendance at the meeting of the auxiliary to the American Medical Association meeting in San Francisco, California, are Mrs. H. E. Christenberry of Knoxville, president of the state auxiliary, and Mrs. T. G. Pollard of Nashville.

MEDICAL SOCIETIES

Davidson County:

May 10—"A Severe Thyrocardiac and Diabetic Relieved by Thyroidectomy," by Dr. Thos. Frist. Discussed by Dr. E. L. Rippy.

"Case Report: Carcinoma of Uterus. Five-Year Cure," by Drs. H. S. Shoulders and D. W. Smith. Discussed by Dr. W. C. Dixon.

May 17—"Postpartal Heart Failure," by Dr. David Strayhorn. Discussed by Dr. Wm. R. Cate.

"Case Report: Medical Management of Obstructive Duodenal Ulcer," by Dr. Jack Witherspoon. Discussed by Dr. Joe Alford.

May 24—"Surgical Treatment of Essential Hypertension," by Dr. T. D. McKinney. Discussed by Dr. Owsley Manier.

"Case Report: The Arrest of a Case of Pemphigus with Vitamin D and Viosterol," by Dr. Howard King. Discussed by Dr. E. E. Brown.

May 31—"The Value of the Electrocardiogram in Disease of the Heart," by Dr. W. R. Cate. Discussed by Dr. Edward L. Turner.

"Case Report: A Case of Bantis Disease," by Drs. J. S. Read and M. B. Davis. Discussed by Dr. D. C. Seward.

The academy adjourned to meet again the first Tuesday night in September.

Dyer, Lake, and Crockett Counties:

The Dyer, Lake, and Crockett Counties Medical Society met in regular monthly session Wednesday, June 1, on Reelfoot Lake in Nanny Boyett's dining room.

The following scientific program was most instructive because of the various subjects being presented in a masterly fashion:

"Sciatic Neuritis," Dr. Nicholas Gotten, Memphis.

"Diabetes," Dr. Albert Weinstein, Nashville.

"Diseases of the Thyroid Gland," Dr. W. C. Chaney, Memphis.

"Peptic Ulcer," Dr. Thomas Frist, Nashville.

(Signed) C. L. DENTON, *Secretary.*

Greene County:

DR. C. W. FRIBERG GUEST OF GREENE COUNTY MEDICAL SOCIETY

Dr. C. W. Friberg, of Johnson City, and district chairman of the Committee on Maternal Welfare of the Tennessee State Medical Association, addressed the Greene County Medical Society at its regular monthly meeting held at the Andrew Johnson Club, Tuesday evening, June 7.

Dr. Friberg outlined the proposed program of lay education of women of Greene County on the subjects of prenatal and post-partum obstetrical care. This program is an outgrowth of the postgraduate course in obstetrics that was attended by the physicians of Greene County last summer.

Dr. C. B. Laughlin presented a paper on "The Heart Case as a Surgical and Obstetrical Risk." Dr. H. B. Anderson discussed this paper.

The following members were present: Drs. M. A. Blanton, H. B. Anderson, C. B. Laughlin, C. P. Fox, L. E. Dyer, N. H. Crews, H. W. Fox, Hal Henard, W. T. Mathes, and I. E. Phillips.

I. E. PHILLIPS, *Secretary.*

Hamilton County:

May 19—"Surgical Treatment of Peptic Ulcer," by Dr. E. Dunbar Newell.

May 26—"Manifestations and Treatment of Chronic Sinus Infections," by Dr. D. Isbell.

"Tracheobronchitis," by Dr. T. Lyle Davis.

"Novel Experiences in Nose and Throat Practices," by Dr. J. McChesney Hogshead.

June 2—"Bronchoscopy in Disease of the Lungs," by Dr. Stewart Lawwill.

Hardin, Lawrence, Lewis, Perry, and Wayne:

The Five-County Medical Society met in Waynesboro on May 31. The following papers were read:

"Arterial Hypertension," by Dr. John C. Pearce, Jackson. Discussion opened by Drs. Frank H. Norman, Waynesboro, and J. H. Taylor, Morris Chapel.

"Spastic Colon," by Dr. W. E. Boyce, Flatwoods. Discussed by Drs. Leo Harris, Lawrenceburg, and D. L. Woods, Waynesboro.

"Agranulocytosis," by Dr. Joe W. Alford, Jr., Nashville. Discussed by Drs. J. W. Danley, Lawrenceburg, and T. J. Stockard, Lawrenceburg.

"Displacements of the Uterus," by Dr. John H. Tilley, Lawrenceburg. Discussed by Dr. J. W. Frost, Linden, and Dr. Henry N. Moore, Savannah.

"Atypical Appendicitis," by Dr. Glen D. Batten, Jackson. Discussed by Drs. J. T. Keeton, Clifton, and O. A. Kirk, Linden.

Shelby County:

The Memphis and Shelby County Medical Society met June 7.

The following papers were read:

"A Study of 137 Premature Babies," by Dr. David Goltman. Discussed by Drs. A. G. Quinn and W. L. Rucks.

"The X-ray Treatment of Trifacial Neu-

(Continued on page 244)

LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

President—Dr. Tom R. Barry, Knoxville.

Vice-President for West Tennessee—Dr. John Jackson, Dyer.

Vice-President for Middle Tennessee—Dr. W. S. Rude, Ridgetop.

Vice-President for East Tennessee—Dr. W. A. Garrott, Cleveland.

Secretary-Editor—Dr. H. H. Shoulders.

Assistant Secretary-Editor—Dr. W. M. Hardy.

TRUSTEES

Chairman and Treasurer—Dr. C. M. Hamilton, Doctors Building, Nashville.

Dr. A. F. Cooper, Goodwyn Institute Building, Memphis.

Dr. E. R. Zemp, Walnut Street, Knoxville.

Dr. Franklin B. Bogart, Medical Arts Building, Chattanooga.

Dr. George C. Williamson, Columbia.

COUNCILORS

First District—Dr. L. E. Dyer, Greeneville.

Second District—Dr. S. R. Miller, Knoxville.

Third District—Dr. Hiram A. Laws, Jr., Chattanooga.

Fourth District—Dr. J. T. Moore, Algood.

Fifth District—Dr. John W. Sutton, Petersburg.

Sixth District—Dr. H. S. Shoulders, Nashville.

Seventh District—Dr. C. D. Walton, Mt. Pleasant.

Eighth District—Dr. J. R. Thompson, Jackson.

Ninth District—Dr. E. H. Baird, Dyersburg.

Tenth District—Dr. W. B. Burns, Memphis.

Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

Delegates to the American Medical Association—

Dr. E. G. Wood, Knoxville; East Tennessee.
Dr. H. H. Shoulders, Nashville; Middle Tennessee.
Dr. H. B. Everett, Memphis; West Tennessee.

Alternates—

Dr. E. T. Newell, Chattanooga; East Tennessee.
Dr. J. O. Manier, Nashville; Middle Tennessee.
Dr. E. C. Ellett, Memphis; West Tennessee.

OFFICERS OF COUNTY MEDICAL SOCIETIES

COUNTY	PRESIDENT	VICE PRESIDENT	SECRETARY
Anderson	O. E. Ballou, Clinton	Geo. W. Kelly, Clinton	J. S. Hall, Clinton
Bedford	James N. Burch, Shelbyville	Price Womack, Shelbyville	W. H. Avery, Shelbyville
Blount	G. D. LeQuire, Maryville	W. C. Crowder, Maryville	J. Frank Manning, Maryville
Bradley	D. N. Arnold, Cleveland	C. H. Taylor, Cleveland	Madison S. Trewhitt, Cleveland
Campbell	J. L. Heffernan, Jellico	G. M. Rogers, LaFollette	R. J. Buckman, LaFollette
Carroll	O. W. Fesmire, Trezevant		J. H. Williams, McKenzie
Carter	A. R. Collins, Watauga Valley	H. P. Damron, Elizabethton	E. T. Pearson, Elizabethton
Chester, Henderson, Decatur	R. M. Conger, Decaturville		L. C. Smith, Henderson
Cocke	J. A. P. Shields, Hartford	W. C. Ruble, Drew A. Mims, Newport	W. E. McGaha, Newport
Cumberland	E. W. Mitchell Crossville		V. L. Lewis, Crossville
Davidson	W. B. Anderson, Nashville	M .S. Lewis Nashviiie	J. P. Gilbert, Nashville
Dickson	Hartwell Weaver, Dickson		R. P. Beasley, Dickson
Dyer, Lake, Crockett	J. O. McKinney, Friendship	J. E. Frazier, Newburn (Dyer) J. P. Moon, Tiptonville (Lake) W. H. Stallings, Friendship (Crockett)	C. L. Denton, Dyersburg
Fayette, Hardeman	F. K. West, Rossville		Wiley D. Lewis, Bolivar
Fentress	A. H. Crouch, Forbus		C. A. Collins, Wilder
Franklin	Geo. E. Bogart, Sherwood	Henry T. Kirby-Smith, Winchester	John M. Hardy, Sewanee
Gibson	John Jackson, Dyer	Robert Morris, Medina	E. P. Bowerman, Trenton
Giles	A. W. Deane, Pulaski	G. C. Grimes, Aspen Hill	J. U. Speer, Pulaski
Greene	Hal Henard, Greeneville	R. S. Cowles, Greeneville	I. E. Phillips, Greeneville
Grundy	O. H. Clements, Palmer	Wm. A. Brewer, Monteagle U. B. Bowden, Pelham	T. F. Taylor, Monteagle
Hamblen	R. A. Purvis, Morristown	D. J. Zimmerman, Morristown	D. R. Roach, Morristown
Hamilton	A. M. Patterson, Chattanooga	S. H. Long, Chattanooga	J. Marsh Frere, Chattanooga
Hardin, Lawrence, Lewis, Perry, Wayne	J. T. Keeton, Clifton	Henry N. Moore, Savannah (Hardin) Leo Harris, Lawrenceburg (Lawrence) Paul Wiley, Hohenwald (Lewis) W. E. Turner, Lobelville (Perry) D. L. Woods, Waynesboro (Wayne)	O. H. Williams, Savannah
Haywood	R. T. Keeton, Brownsville	G. G. Mulherin, Brownsville	Roy M. Lanier, Brownsville
Henry	A. F. Paschall, Puryear	Elroy Scruggs, Paris	R. Graham Fish, Paris
Hickman	Margaretta Bowers, Wrigley	E. C. Mulliniks, Centerville	W. K. Edwards. Centerville
Jackson			E. W. Draper, Gainesboro
Knox	Robt. F. Patterson, Knoxville	R. G. Waterhouse, Knoxville	Jesse C. Hill, Knoxville
Lauderdale	Joe B. Lackey, Ripley		Jas. L. Dunavant, Ripley
Lincoln	R. T. Odom, Fayetteville	W. S. Joplin, Petersburg	R. E. McCown, Fayetteville
Loudon	J. A. Leeper, Lenoir City	J. T. Mourfield, Lenoir City	J. R. Watkins, Loudon
Macon	D. D. Houser, Lafayette		J. Y. Freeman, Lafayette
Madison	Glenn D. Batten, Jackson	William K. Sullivan, Jackson	S. M. Herron, Jackson
Maury	Leon Ward, Mt. Pleasant	H. O. Anderson, Mt. Pleasant	D. B. Andrews, Columbia
McMinn	Boyd McClary, Etowah	C. O. Foree, Athens	D. F. Seay, Englewood
McNairy	E. M. Smith, Selmer	J. R. Smith, Selmer	T. N. Humphrey, Selmer
Monroe	R. C. Kimbrough, Madisonville		David M. Cowgill, Madisonville
Montgomery	M. L. Shelby, Clarksville	Philip L. Lyle, Clarksville	V. H. Griffin, Clarksville
Obion			D. S. Latimer, Union City
Overton	W. M. Breeding, Livingston		A. B. Qualls, Livingston
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Putnam	R. L. Witherington, Cookeville	T. M. Crain, Monterey	Thurman Shipley, Cookeville
Roane	O. H. Coleman, Kingston	F. A. Neergaard, Harriman	J. C. Fly, Kingston
Robertson	W. P. Stone, Springfield	J. W. Wilkison, Springfield	W. F. Fyke, Springfield
Rutherford	John F. Cason, Murfreesboro	R. C. Van Hook, Auburntown	J. A. Scott, Murfreesboro
Scott	D. T. Chambers, Norma	T. L. Phillips, Oneida	Milford Thompson, Oneida
Sevier	R. F. Thomas, Sevierville	R. J. Ingle, Sevierville	H. A. Sauberli, Sevierville
Shelby	J. J. Hobson, President, Memphis J. H. Francis, Pres.-Elect, Memphis	W. C. Colbert, Memphis	A. F. Cooper, Secretary, Memphis E. G. Kelly, Treasurer, Memphis
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Sumner	C. D. Robbins, Gallatin	C. H. Donoho, Portland	W. M. Dedman, Gallatin
Tipton	A. J. Roby, Covington	J. J. Fleming, Atoka	H. C. Currie, Covington
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*Warren	John S. Harris, McMinnville	E. L. Mooneyham, Rock Island	John T. Mason, McMinnville
Washington	H. B. Cupp, Mountain Home	Walter Hankins, Johnson City	Carroll H. Long, Johnson City
Weakley	J. A. Moore, Sharon	M. D. Ingram, Dresden	T. B. Wingo, Martin
White	E. T. Tubb, Sparta		A. F. Richards, Sparta
Williamson	W. F. Roth, Jr., Franklin	B. T. Nolen, Franklin	K. S. Howlett, Franklin
Wilson	J. S. Campbell, Lebanon	R. N. Buchanan, Jr., Lebanon	R. B. Gaston, Lebanon

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* 1937 Officers.

COMMITTEES*

The following is a list of the standing committees of the Tennessee State Medical Association provided for in the constitution and by-laws and appointed by the proper authority, together with some special committees appointed under the authority of a resolution by the House of Delegates.

Some of the committees are appointed for a definite period. In such instances the appointment of the committeeman expires with the meeting of the House of Delegates in the year stated opposite his name.

COMMITTEE ON SCIENTIFIC WORK

Dr. H. H. Shoulders, Chairman, Nashville.
Dr. A. F. Cooper, Memphis.
Dr. Frank Harris, Chattanooga.
Dr. A. H. Lancaster, Knoxville.

STATE TUBERCULOSIS COMMITTEE

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Dr. O. N. Bryan, Nashville.
Dr. C. M. Oberschmidt, Memphis.
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HOSPITAL COMMITTEE

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Dr. E. H. Baird, Dyersburg.
Dr. E. A. Gilbert, Chattanooga.
Dr. E. G. Wood, Knoxville.
Dr. H. B. Everett, Memphis.
Dr. Lee K. Gibson, Johnson City.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION

Dr. L. W. Edwards, Chairman, Nashville (1939).
Dr. E. W. Cocke, Memphis (1941).
Dr. Battle Malone, Memphis (1940).
Dr. Tom Barry, Knoxville (1938).
Dr. T. R. Ray, Shelbyville (1942).

LIAISON COMMITTEE

Dr. W. C. Dixon, Chairman, Nashville (1941).
Dr. W. P. Wood, Knoxville (1940).
Dr. Hiram A. Laws, Chattanooga (1939).
Dr. Tom Mitchell, Memphis (1938).
Dr. Tom R. Barry, Knoxville (1942).

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Dr. C. M. Hamilton, Nashville.
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COMMITTEE ON MEDICAL DEFENSE

Dr. S. R. Miller, Chairman, Knoxville.
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Dr. Oliver Hill, Knoxville.
Dr. Percy Wood, Memphis.

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Dr. J. Marsh Frere, Chairman, Chattanooga (1940).
Dr. R. B. Wood, Knoxville (1938).
Dr. D. W. Smith, Nashville (1940).
Dr. H. B. Gotten, Memphis (1938).
Dr. W. O. Baird, Henderson (1939).
Dr. J. M. Lee, Nashville (1939).

COMMITTEE ON MEMOIRS

Not filled.
Dr. H. Quigg Fletcher, Chattanooga.
Dr. E. L. Ellis, Maryville.
Dr. L. J. Lindsey, Covington.
Dr. B. T. Nolen, Franklin.

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Dr. M. S. Lewis, Nashville.
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Dr. H. S. Shoulders, Nashville.
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Dr. Franklin B. Bogart, Chattanooga.
Dr. O. W. Hyman, Memphis.
Dr. John M. Lee, Nashville.
Dr. J. O. Manier, Nashville.
Dr. W. L. Williamson, Memphis.
Dr. John B. Youmans, Nashville.

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*New committeemen for vacancies due to occur have not been appointed.

ralgia," by Dr. W. S. Lawrence. Discussion by Drs. J. C. King and W. C. Chaney.

"Case Reports: Multiple Renal Calculi," by Dr. E. H. Carnes.

"Riedel's Struma," by Dr. J. L. McGehee.

Washington County:

On May 30 the members of the Washington County Medical Society were the guests of the staff of the Veterans Administration Facility, Mountain Home, Tennessee, at a luncheon at which Dr. Charles M. Griffith, medical director of the Veterans Administration, was the guest of honor.

Dr. Griffith discussed "the next war" in addition to summarizing the work of the Veterans Administration.

A number of visiting doctors from East Tennessee and near-by states were present.

OTHER MEDICAL SOCIETIES

VANDERBILT MEDICAL SOCIETY

MAY 6, 1938

1. "A Case of Congenital Anomaly of the Back," Dr. Thomas E. Wyatt.

A twenty-one-year-old white boy entered the hospital with story of repair of a meningocele soon after birth. There was purulent drainage from the site of operation until age of five and after that for many years had drained clear fluid. As long as he can remember there was a growth of hair over the cervical region which would grow so long as to reach his hips. He had always been extremely active until six years ago when he began to develop a hemiplegia.

Physical examination revealed a kyphos of cervical and upper dorsal vertebrae and a large patch of hair in this region about six inches long; definite paraplegia but no sensory changes. Lumbar puncture revealed a complete block with elevation of protein of spinal fluid.

This is a case of spina bifida occurring in cervical region with remarkable features of late development of paraplegia, the repair at an early date without development of hydrocephalus. Question of treatment is extremely complex.

2. "A Preliminary Survey of Activities in the Vanderbilt Syphilis Clinic," Drs. R. H. Kampmeier and E. Gurney Clark.

The activities of the Vanderbilt Syphilis Clinic since its reorganization in July, 1937, were reviewed. Included was a review of the work given postgraduate students in syphilis coming from four southern states. The interesting results of epidemiological studies on new cases were analyzed. As a result of this work the clinic has necessarily shown an increase in new cases studied and in patients treated. With extensive contact tracing, the problem of syphilis and its control was discussed with many persons. The results of this educational program should be felt by the local profession.

3. "A Study of Convulsions Associated with Verified Intracranial Lesions," Drs. Edward F. Parker, Jr., and Cobb Pilcher.

(1) In a series of 248 verified focal intracranial lesions, convulsions occurred in seventy-eight, or 31.4 per cent; the convulsions were focal in fifty-one and generalized in twenty-seven cases. (2) The incidence of convulsions was greatest in association with lesions contiguous to the motor cortex; the proportion of focal convulsions was also greatest in the same cases. (3) The incidence of convulsions was greatest in association with lesions of slow progression, whether neoplastic, inflammatory, traumatic or vascular. (4) The incidence of convulsions was much greater in association with intracerebral than with extracerebral lesions. (5) The only pathological factor common to all groups of high convulsive incidence is proliferation of the fibrillary neuroglia. This factor may exert a causative influence in the mechanisms of the convulsions in such cases. (6) The sex, age, duration of symptoms and time of appearance of the convulsions are also tabulated.

The West Tennessee Medical and Surgical Association met in Jackson on May 26. A good program was rendered and a large attendance showed its appreciation by liberal discussion of all papers.

The round-table discussions at the luncheon were instructive and enjoyed by all.

Next year the meeting will be held in Huntingdon sometime in May.

The following officers were elected:

Dr. John Jackson, Dyer, president; Dr. C. E. Bolen, Wildersville, vice-president; Dr. Roy Douglass, Huntingdon, vice-president; Dr. George R. McSwain, Paris, secretary; Dr. W. O. Baird, Henderson, assistant secretary.

The Tennessee Valley Postgraduate Medical Assembly will hold its fourth annual meeting in Knoxville, June 22, 23, and 24.

Outstanding speakers of national reputation, as well as several from Tennessee, appear on the program.

If you have not received your copy of the official program write at once to the secretary, Dr. Jesse C. Hill, 409 Doctors Building, Knoxville, Tennessee.

The Middle Tennessee Medical Association met in Goodlettsville on May 19 and 20.

The following officers were elected: Dr. D. W. Smith, Nashville, president; Dr. Sam Fentress, Goodlettsville, vice-president; Dr. Fowler Hollabaugh, Nashville, secretary.

The next meeting will be held in Murfreesboro.

The Five-County Medical Society, composed of Cumberland, Jackson, Overton, Putnam, and White Counties, met in Gainesboro, May 19. About twenty-five members were present. Supper was served at the hotel. Papers were read by Dr. A. R. Collins of Wilder on "Arthritis" and Dr. W. A. Howard of Cookeville on "Fractures." The next meeting will be held the third Thursday in July, at which time papers will be read by Dr. E. W. Mitchell of Crossville and Dr. E. W. Draper of Gainesboro.

The Upper Cumberland Medical Society held its forty-fourth annual meeting at Red Boiling Springs, June 7 and 8. A most excellent program of sixteen papers was given. The next meeting will be at Cookeville. The following officers were elected: Dr. Thurman Shipley, Cookeville, president; Dr. H. C. Hesson, Red Boiling Springs, first vice-president; Dr. Fred Terry, Cookeville, second vice-president; Lillard Sloan, Carthage, third vice-president; and L. M. Freeman, Granville, secretary-treasurer.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Building, Nashville

Massive Atelectasis Following Cyclopropane Anesthesia. Jones and Burford. Journal of American Medical Association, April 2, 1938.

During the last two years four deaths have occurred following cyclopropane anesthesia.

Autopsy showed massive atelectasis. Massive atelectasis is generally assumed to be caused by an obstruction to a main bronchus followed by absorption of alveolar of gases behind the obstruction, but this is not always the case. It was found that cyclopropane, nitrous oxide, and oxygen are absorbed in minutes, while inert gases as nitrogen, hydrogen, and helium required eighteen to twenty-six hours for absorption. Cyclopropane and high percentages of oxygen combined with quiet respiration and the elimination of the alveolar air cause the periphery of the lungs to be underventilated, causing a creeping atelectasis due to the quick absorption of gases.

Of these four deaths one occurred on the operating table after eight minutes of anesthesia and the other three on the way from the operating room to bed. To obviate these anesthetic disasters the use of an inert gas, preferably helium, is suggested. Helium is light, nonexpensive, and very slowly absorbed, replacing the nitrogen that is washed out.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

Treatment of a Pemphigoid Eruption with Sulfanilamide. Report of a Case by Everett S. Lane, M.D., and John H. Lamb, M.D., Oklahoma City, Oklahoma. Archives of Dermatology and Syphilology, May, 1938.

The authors had previously treated erysipelas with sulfanilamide, getting striking results. Based upon Welch's ability to isolate from the nasopharynx of patients with pemphigus streptococci which were virulent for five species of animals and was able to produce lesions consistent with pemphigus in a fair number, they decided to try the new drug.

On January 30, 1938, a farmer, aged forty-eight, was referred to them. After careful examination, a diagnosis of pemphigus was made. Treatment was instituted on February 1, the patient being given thirty grains of sulfanilamide. On February 2 he was given forty and was continued with forty-five grains a day until February 7, when the dose was decreased to fifteen. Fading of the eruption was noticed within thirty-six hours and then became spectacular. After three days nearly all the old lesions were exfoliating and only one or two small new ones had appeared on the chest. On the sixth day no new lesions appeared, but there had appeared on the posterior parts of the thighs and buttocks an eruption which was red and only slightly vesicular. They suspected that this secondary eruption might have been caused by the sulfanilamide. The dose was then reduced to fifteen grains daily, after which no new lesions appeared and the secondary eruption cleared. By February 11 all lesions had completely subsided and exfoliated. On February 14 a secondary eruption appeared on the face and hands. Sulfanilamide was discontinued and the eruption rapidly subsided. The patient's skin has remained clear for four weeks at the time of the report. He is taking only five grains every other day.

INTERNAL MEDICINE

By R. B. Wood, M.D.
By D. R. Thomas, M.D.
Medical Arts Building, Knoxville

Drugs in the Treatment of Heart Disease. Robert L. Levy, M.D., F.A.C.P., New York. Annals of Internal Medicine, May, 1938.

In the treatment of heart disorders, drugs serve three main purposes: (1) to cope with acute upsets, (2) to restore the function of a failing heart, (3) to prevent occurrence of disturbances in circulation or their recurrence. A few of the more important drugs have been selected for discussion.

Digitalis.—When the heart fails to function as a pumping mechanism, this drug is indicated regardless of the etiological type of disease, nor does it matter whether left or right. Its mode of action is through direct effect on cardiac muscle and vagus nerves. The effect on the A-V conduction system is due to depression of the junctional tissues and vagal stimulation.

The author believes the whole leaf preferable for administration and calculation of dose by body weight is unnecessary.

Squill.—Recently marketed under the name of "Urginin" this drug was studied by Chamberlain and the author. It has a digitalis life effect and about one-half the potency. Its toxic effect is that of digitalis and the electrocardiographic change is the same. It serves the purpose of substitution in those patients intolerant of digitalis.

Stropanthin.—Unsuitable for oral use because of variability in absorption. Its initial effect is apparent from five to twenty minutes when given intravenously. It may safely be given to cases of auricular fibrillation with tachycardia, which have had no digitalis for a week. The ventricular rate can be used as a guide of effect.

Diuretics.—These are indicated when in the presence of cardiac failure digitalis has not promoted sufficient diuresis to relieve edema. One of the most valuable is theobromine sodium salicylate, less upsetting to digestion than theophylline (theocin), but lasting for shorter period than theocalcin.

The mercurials, as mercupurin and salyrgan, are more potent and rapid in action and are relatively nontoxic and may be given intravenously or by rectum. They are best preceded by some of the "acid-producing" salts, as ammonium chloride or nitrate.

It is to be remembered that their mode of action is different and may safely be alternated. The xanthines increase glomerular filtration, while the mercurials diminish tubular reabsorption.

Sedatives.—"Little benefit is likely to arise from treatment so long as a patient is worried or sleepless" (Mackenzie). Morphine, barbiturates and bromides are suggested.

Cathartics.—Vigorous purging is not indicated.

Glucose.—Intravenous injections of fifty to 100 cubic centimeters of a fifty per cent glucose may initiate improvement not otherwise obtained by serving as nutriment for the myocardium and as a diuretic.

Oxygen.—One of the best methods for relieving anoxemia by elevating oxygen saturation. Slowing of heart rate relief of dyspnea and cyanosis follow. A tent may result in restoring compensation not otherwise obtainable.

Cardiac Pain.—Due to anginal episodes it can often be relieved with a small dose of nitroglycerine as 1/200 to 1/150 grain. If an attack lasts an hour and is not relieved by nitrites, one should suspect an occlusion of a coronary vessel. If a task has to be performed that produces an attack of pain, it may be prevented by nitrites.

Sedatives such as bromides or barbiturates may reduce the threshold of pain.

The Xanthines.—Their value as coronary dilators is debatable. Many have been unable to believe that it is possible to increase a collateral circulation sufficient to be of use by vasodilator drugs.

Organ and tissue extracts gave no result in the hands of the author.

Acute Coronary Occlusion.—This is a medical emergency. Complete rest and relief of pain is required. Digitalis is not indicated unless signs of cardiac insufficiency occur. There is more danger of inducing ventricular fibrillation than of causing cardiac rupture through its use.

Oxygen, caffein, and glucose constitute the emergency drugs.

Cardiac Arrhythmias. — Auricular fibrillation usually means a diseased myocardium and a dilated auricle. The first aim of treatment is to slow the ventricular rate and digitalis is the drug of choice. Those patients with a rate of above eighty when undigitalized must take the drug for the balance of their lives.

A limited number may respond to quinidine after digitalis has failed. Indications favoring its use are: fibrillation of recent origin, absence of cardiac enlargement, no valvular disease, and fibrillation existing after subtotal thyroidectomy for hyperthyroidism.

Auricular flutter is treated with digitalis and quinidine.

Paroxysmal Tachycardia.—If attacks are short and infrequent, no treatment is indicated other than the attack which consists of some form of vagal stimulation. If these fail acetyl-B methylcholine may be tried hypodermically in dose of twenty-forty milligrams. The attacks usually subside in one to twelve minutes. Unpleasant symptoms as dyspnea, substernal pain, vomiting, sweating, flushing, and salivation may occur, but these are relieved by atropine intravenously. The drug should not be used in asthmatics. Quinidine given daily may prevent attacks.

Complete Heart Block.—Permanent heart block rarely requires treatment. If cardiac standstill occurs and is sufficient to cause convulsive seizures epinephrin may act favorably, but if convulsive seizures occur as the result of ventricular fibrillation, epinephrin may cause death. Ephedrin is helpful in preventing ventricular standstill as is barium chloride.

The author concludes the article with a few observations on the use of digitalis in pneumonia. It is his belief that circulatory weakness in pneumonia is not cardiac and therefore the routine use is not indicated. It should be used when there are signs of cardiac failure or when fibrillation or flutter occur.

Urticaria—A New Therapeutic Approach. Rusk and Kenamore. Annals of Medicine, April, 1938.

The authors have approached the problem of certain cases of urticaria from the chemical point of view. While most of these cases are considered to be allergic, many do not respond to desensitization and withdrawals in treatment, and this interested them in the chemical aspect.

They cite certain experiments proving that a scraped skin muscle preparation of a frog lost its tactile excitability due to the liberation of the potassium from the skin, washing this potassium away allowed the excitability to return, and that the application of potassium to normal skin depressed the excitability. They refer to the experiments of Nathan and Stern proving that in some of the acute dermatoses the serum potassium fell to a subnormal level, and that the return of the potassium level to normal was coincident with improvement in the dermatoses. Referring to the fact that the secretion of epinephrin by the adrenals, having as one of its functions the maintenance of a constant potassium content in the tissues, they mention experiments by others showing that the changes attributed to epinephrin are really due to potassium; these experiments proving that potassium salts injected intravenously produce results identical with those produced by epinephrin.

Experiments have shown that when the serum potassium is high, it is so because the utilizable potassium has been withdrawn from the skin and the irritability of the skin is increased.

Because of the foregoing facts they decided that potassium would be a valuable drug in the treatment of edematous lesions of the skin, first, because it lowers skin irritability; and second, because its pharmacological action is similar to and definitely allied with that of epinephrin.

They report a series of six cases treated with a high protein, low sodium, acid-ash diet of average caloric value. These cases were all observed from a clinical standpoint as they were unable to make the many necessary chemical determinations due to lack of laboratory facilities. To this diet was added potassium chloride in dosage of sixty to ninety grains a day. All these patients had been tried on various allergic regimes and orthodox treatment without success. In only one case did they obtain any symptoms of potassium intoxication, and this was quickly relieved by a reduction in the dosage. All cases showed very promising results clinically, and they ask for further trial of this therapeutic principle.

OBSTETRICS AND GYNECOLOGY

By Hamilton V. Gayden, M.D.
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Premenstrual Tension. S. Leon Israel. Journal of American Medical Association, 110: 21: 1721, May 21, 1938.

Premenstrual tension is the term applied to a relatively uncommon train of symptoms which occurs cyclically during the premenstruum. The unpleasant symptoms which forty per cent of normal women suffer in varying degrees before the onset of flow are well known. Minor menstrual complaints are not considered in this report (fatigue, irritability, lack of concentration, backache, and pelvic discomfort). Well-marked premenstrual tension is readily recognized, occurring in women between twenty and forty years of age characterized by cyclic alteration of personality. This alteration comes on ten to fourteen days prior to menstruation and terminates dramatically with onset of flow; its relationship to menstruation is a striking phenomena. The patient describes her feelings often as "would like to jump out of her skin," and this is further borne out to observers by her unusual behavior. Unrest, constant irritability, unreasonable emotional outbursts, persistent insomnia, vertigo, headaches and when at its maximum height tension shows manic activity.

As harassing symptoms arise during the height of corpus luteum activity and are aggravated by eostrogen therapy, substitutive treatment with progestin (PROLUTON-Schering) produced good results, rendering five of seven patients free of symptoms, the remaining two noted considerable improvement. This therapy was not permanent. Low dose irradiation of the pituitary gland and the ovaries was employed. After observation over one and one-half to two and one-half years six patients have remained symptom free. Two required the second dose of low dose irradiation and have been free for one year.

The roentgen treatments were administered after the technic of Edeiken which is described and includes fifty to eighty roentgens at weekly intervals to both pituitary and pelvic fields for three doses. (A very small dose—no skin troubles, no untoward symptoms.)

There is absolute safety in this very low dosage. Despite the fact that its greatest field of usefulness is in the treatment of certain types of menstrual irregularities, low dose irradiation of the pituitary gland and ovaries may be applicable in the treatment of regularly menstruating women with functional aberrations of the gonads.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
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Results of Corneal Transplantation. Dr. Ramon Castroviejo. Archives of Ophthalmology, May, 1938.

More than 100 corneal transplantations have been performed during the past four years at the Institute of Ophthalmology, Medical Center.

The shape of the transplant as well as different steps of the technic have been altered repeatedly in order to find the procedure which would give the best results in the highest percentage of cases. Occasionally modifications of the technic had to be introduced to suit particular instances. Marked improvement in vision was obtained in over forty per cent of the unselected cases in which corneal transplantation was performed. Of the favorable cases in which this procedure was carried out, a transparent corneal graft was obtained in over seventy per cent with marked improvement in vision, varying from perception of hand motion to the counting of fingers at from one to four feet (thirty to 122 centimeters) before the operation to from 20/200 to 20/20 afterward.

Corneal transplantation, in the present state of knowledge, does not offer a much greater operative risk than an operation for cataract. The results obtained with corneal transplantation can be favorably compared with those obtained with other operations universally accepted and routinely practiced by ophthalmic surgeons.

DISCUSSION

Dr. Ernst Waldstein: May I ask whether corneal grafting is more likely to produce better results in some conditions than in others? Have Dr. Castroviejo and his associates found that this procedure gives better results in cases of corneal opacity following parenchymatous interstitial keratitis than in cases of opacity following, say, a burn from lime?

Dr. Ramon Castroviejo: When a transplant is to be entirely surrounded by dense scar tissue, the transplant seldom remains transparent. It generally becomes either nebulous or opaque.

The transplant remains transparent in a high percentage of cases of parenchymatous keratitis, in which, as a rule, a good deal of normal or almost normal corneal tissue is preserved.

A corneal leukoma following a burn from lime or similar types of injury is generally unfavorable for keratoplasty, on account of the extreme density of the leukoma and the presence of superficial blood vessels, resembling those observed in cases of severe trachomatous pannus. A preliminary operation should be performed to remove the vessels from the cornea. Otherwise, the transplant becomes either nebulous or opaque.

PEDIATRICS

By John M. Lee, M.D.
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The Need of Redetermining Schick Negativeness in School Children. A. B. Schwartz, M.D., and F. R. Janney, M.D., Milwaukee. Journal of American Medical Association, 110: 1743 (May 21), 1938.

Since 1895 diphtheria has been decreasing in the United States, reaching a very low point in the past ten years. In the absence of clinical diphtheria the school population may lose their Schick negativeness for lack of stimulation since it has been shown that the duration of immunity depends a great deal on restimulation of the immune response by exposure to a diphtheria environment.

The authors recently retested 145 children who had negative Schick tests six or seven years ago after receiving diphtheria toxoid; twenty-two per cent showed positive Schick tests. Fraser and Halpern reported one-third of the children retested by them had lost their immunity within five years. Park suggests that a large number of reversions to a positive Schick test after one dose alum toxoid may be expected.

In recent years there has been an apparent increase of diphtheria in supposedly Schick negative children. It is now the general practice to immunize against diphtheria at about nine months of age and perform a Schick test within a few months thereafter. This leaves an interval of about five years before entering school. It has been assumed that once a negative Schick test has been obtained immunity is permanent.

The authors recommend that all children entering school be routinely given a Schick test or one cubic centimeter dose of toxoid to insure their immunity against diphtheria.

ROENTGENOLOGY

By Franklin B. Bogart, M.D.
Medical Arts Building, Chattanooga

Roentgenologic Aspect of Silicosis. Edwin C. Ernst, M.D. St. Louis, Missouri. From the Department of Radiology of the DePaul Hospital. Radiology, Vol. 30, No. 3, p. 285.

Various methods of lung examinations have their limitations, and the early roentgenological diagnosis of silicosis is no exception.

Importance of knowledge of the microscopical anatomy of the lung is stressed.

The impossibility of making an early diagnosis on film produced with a great variety of technique is emphasized. The minimum technical requirements are an X-ray transformer, developing from 400 to 500 milliampere capacity in a tube containing a target focal spot no greater than 4.5 millimeters, six-foot target film distance, with an exposure time of 1/20 second. The new rotating anode tubes are still better. The use of a magnifying glass, which magnifies at least five and one-half times, is essential in studying suspicious areas. Stereoscopic films are preferable to plain films. Serial films at intervals of six months to twelve months are essential in some cases, as a diagnosis cannot always be made at the time of the first examination.

The importance of the films being taken in inspiration with the proper amount of penetration or K.V.P. is stressed.

Illustrative cases are shown to show the difficulty of distinguishing the nodular formation seen in early silicosis from somewhat similar nodules seen in tuberculosis of the miliary type, in blastomycosis, and other mycotic infections.

SURGERY—GENERAL AND ABDOMINAL

By Battle Malone, II. M.D.
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Treatment of Dislocation of the Shoulder. Henry Welch, M.D. Surgery, 3: 732, May, 1938.

Occasionally Kocher's method of reducing a shoulder dislocation results in a fracture of the humerus. A case is presented in which this took place and it became necessary to do an open operation to correct the dislocation and the complicating fracture.

The importance of the muscles in the mechanism of reduction is brought out. The resistance of the subscapularis and pectoralis muscles is overcome by external rotation. Not only these muscles, but the others about the shoulder joint are involved in the mechanism. This is shown by the comparative ease with which reduction can be accomplished under general anesthesia. The pull of the shoulder muscles is in all directions and when the normal position of the head of the humerus is displaced from the glenoid cavity, these muscles exert abnormal stresses. While these muscles exert cross stresses when the arm is in the normal position by the side, when the arm is in the overhead position the axes of the pull of the different muscle groups are more or less collinear and their antagonistic effects are minimized.

The method of reduction presented is without traction which is a definite causative factor in nerve injuries following dislocations. The patient lies in the supine position with the surgeon on the side of the dislocation. If it be the right side the surgeon's right hand is placed on the patient's right shoulder with the thumb braced against the dislocated humeral head. The surgeon's left hand gently abducts the arm into the overhead position, but no traction is made. The head is held firmly in its position by the thumb, and as the arm is abducted it is gently externally rotated to release the twisted capsule.

With the arm in the overhead position the cross stresses of the muscles are eliminated and the head can be gently pushed over the rim of the glenoid, reducing the dislocation. This maneuver can be carried out usually without an anesthetic, but a small amount of gas may be necessary to obtain the desired muscular relaxation. The method may be called that of abduction, external rotation, and pulsion.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.
By G. A. Williamson, Jr., M.D
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Nephrectomy for Arterial Hypertension. Preliminary Report. C. Holmes Boyd and Lloyd G. Lewis. Journal of Urology, May, 1938.

Hypertension is commonly found in cases where there has been an obstruction in the lower urinary tract of long standing. With relief of the obstruction, the hypertension tends to return to normal. Intrinsic renal diseases, as nephritis, usually have an elevation of blood pressure.

The prevailing conception of the relationship between hypertension and renal diseases has assumed that bilateral renal involvement was necessary before hypertension resulted.

Experiments in recent years have demonstrated that hypertension can be produced in animals by various methods involving injury to the kidneys and interference with their blood supply.

Unilateral ischaemia of a kidney by partial constriction of its artery causes an elevation of the blood pressure in the experimental animal. The removal of the ischaemic kidney at the height of the hypertension is followed by prompt return of the blood pressure to normal.

These experiments suggest the possibility that certain cases of hypertension in the human being are due to unilateral renal disease, and may be cured by nephrectomy. Recently a few such cases have been reported.

The authors report the case of a colored boy, five and one-half years of age, with a hypertension and unilateral diseased pelvic kidney, cured by nephrectomy. They also report a case of Dr. Lloyd Lewis with a sudden hypertension associated with infarct of one kidney and cured by nephrectomy. There are two additional cases recorded from the literature by Bulter of hypertension in children, whose blood pressure returned to normal after removal of a diseased kidney.

In this article these authors bring to our attention a condition which might account for certain cases of obscure hypertension and its cure by nephrectomy.

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ISSUED MONTHLY, Under Direction of the Trustees

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OFFICE OF PUBLICATION, 508 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXXI July, 1938 No. 7

RECENT EXPERIENCE WITH TRANSURETHRAL PROSTATECTOMY*

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THERE ARE VERY few physicians who will today deny that great advances have been made in transurethral surgery. This branch of practice has perhaps improved more during the past decade than any other surgical field, largely because of the ingenious electrical devices and instruments which have made possible the removal of tissue from the prostate gland under perfect vision. Those interested can read an interesting account of progress in transurethral surgery written by Gutierrez in "History of Urology." One cannot but marvel at the courage of pioneers in this field who step by step advanced the art in spite of the handicap of clumsy instruments and faulty electrical equipment.

Prejudice developed against transurethral surgery during the early years of this century, and it still exists in the minds of some elderly practitioners unafflicted with urinary difficulties. I can attest the fact that there is no prejudice in the minds of those physicians who during the last ten years have themselves required surgical treatment of an enlarged prostate gland. Almost without exception they have elected to be relieved of their difficulty by urethral operation. Debate is still fostered by those who are champions of suprapubic or perineal prostatectomy, both of which, in my opinion, are obsolete methods of enucleating the prostate gland. However, it is only through honest difference of opinion that progress is made and knowledge disseminated. We are all, as physicians, interested in relieving the suffering of the largest number of patients by a method causing the least individual discomfort. With this in mind I shall attempt in the ensuing pages to point out a few facts which have become apparent from studying the records of patients observed at the Mayo Clinic during the year 1937.

INDICATIONS FOR OPERATION

It has been alleged that transurethral resection has been injudiciously advised for many individuals who do not really have prostatic hypertrophy. Attempts have been made to account for the low operative mortality and lack of morbidity on this basis. On the contrary, however, the records clearly show that the average age of the patient subjected to operation has increased. The man beyond the age of seventy-five has been particularly benefited, for our records show that during the period from 1924 to 1931, inclusive, out of a yearly average of 240 patients an average of only thirteen per year in this advanced age group came for operation, whereas in the year 1937 alone 125 patients, all aged seventy-five years or more, were included in the total of 782 patients who were operated on in that year. Thus the records show that the number of men more than seventy-five years of age who came for operation increased almost tenfold, whereas the total number of prostatic patients increased only slightly more than threefold.

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*Read before the Tennessee State Medical Association, Nashville, April 12, 13, and 14, 1938.

It is apparent, therefore, that there are new indications for prostatic surgery. The man with sclerotic arteries, a cardiac disorder, hypertension, renal insufficiency, or in fact degenerative disease of almost any kind, can with reasonable safety be relieved of his discomforting urinary symptoms. Prior to this modern operation the mortality of prostatectomy among men beyond the age of seventy-five was prohibitive. Men did not elect, nor did their family physicians as a general rule advise them, to submit even to the best that any surgeon could do, which in almost any hospital involved a mortality of at least thirty per cent. Today, not only the man who is entirely unable to void submits to operation, but also the one who suffers from nocturia, dysuria, pyuria, etc., and who has only moderate restriction of the urinary stream. Such an individual, because of the low morbidity and mortality rate, can sanely elect to be relieved by transurethral resection. Furthermore, the younger individual suffering from dysuria, recurring cystitis, pyelitis, etc., which has as its primary cause a definite though mild hyperplasia of the prostate gland, can and does elect to have operation. No longer is it necessary to treat these patients who have three to five ounces of residual urine by such conservative measures as prostatic massage, daily irrigations of the bladder, and by various oral medications. Without exaggeration one can offer such patients through transurethral operation great improvement and, in fact, as a rule, permanent cure.

Selection of Cases

In 1933 I called attention[2] to the wisdom of carefully selecting cases for transurethral operation during the period when the surgeon is acquiring skill. Aside from this no selection of cases is necessary, and it is possible and desirable to resect obstructing tissue in almost any case. There are only two exceptions to this broad generalization: (1) the extremely rare case in which the prostate gland is huge and weighs more than 250 grams, which cases, according to experience at the clinic covering a period of twenty years, occur less than twice in a thousand, and (2) the rare case in which passage of the instrument is prevented by an extremely large median lobe that completely fills the vesical cavity. Urethral stricture does not prevent instrumentation, for one can perform perineal urethrotomy, such as I described in 1937, and in this fashion proceed with transurethral resection without danger to the urethra.

Preoperative Preparation

It has long been taught that an interval during which the bladder is drained either by a catheter taped in the urethra or by a tube introduced through the suprapubic area, so-called cystotomy, must precede removal of the enlarged prostate gland. This teaching, I am sure, is responsible for a greater incidence of postoperative complications than any other single factor. Unless definite renal insufficiency exists no benefit can be derived from such drainage; in fact, harm results for the urethra is inflamed preoperatively by the catheter or in the case of the suprapubic tube convalescence is prolonged unduly postoperatively while the fistula heals. Intermittent catheterization, if carefully done, will keep the patient comfortable while roentgenograms and various laboratory studies are completed, following which transurethral resection can proceed through a urethra undamaged by an inlying catheter. I have elected to defer preoperative catheterization of patients still able to void, even though the bladder is greatly distended, providing retention of urea in the blood is less than seventy milligrams per 100 cubic centimeters. By such practice the preoperative period of hospitalization is reduced to a minimum without, in my opinion, increased risk.

In cases in which marked uremia is present treatment should consist of drainage by urethral catheter, forcing of fluids both intravenously and orally, and careful avoidance of secondary infection. When the retention of urea exceeds 150 milligrams per 100 cubic centimeters I often give Hartman's solution or five per cent sodium bicarbonate solution intravenously in order to reduce the acidosis which usually is present. If the patient's general physical condition aside from the uremia is poor, it is wise to perform vasectomy in order to prevent epididymitis. Generally, however, this is unnecessary. It is safe to perform transurethral resection in spite of a degree of renal insufficiency that would prevent suprapubic or perineal prostatectomy. For instance, during 1937, I resected the prostate gland in a case wherein the urea on admission was more than 300 milligrams per 100 cubic centimeters and after several weeks' drainage would not go below 160 milligrams. This patient suffered no untoward reaction and is still alive and working daily.

TECHNIC

The instrument employed for transurethral resection at the clinic was devised by me several years ago. With it the removal of fifty grams or more of prostatic tissue in a single operation is possible and for the experienced transurethral surgeon is not a difficult task. A review of the 782 cases in which transurethral resection was performed during 1937 shows that in 302 cases, or 38.6 per cent, it was necessary to remove twenty-five grams or more of tissue. In one case 120 grams of tissue was removed in a single operation. A review of twenty years' experience at the clinic with suprapubic prostatectomy revealed that in 92.7 per cent of the cases the enucleated prostate gland weighed 100 grams or less. Thus it is apparent that in a high percentage of cases transurethral prostatectomy is possible.

The Thompson resectoscope is a cold punch type of instrument. It differs from any direct vision punch instrument heretofore devised in that it is possible to visualize the tissue constantly. In addition, a large outlet valve and coagulating electrode which insures quick hemostasis are integral parts of the instrument.

The operative period should be restricted to one hour. Prolonging it beyond this will usually result in shock and various other postoperative complications.

POSTOPERATIVE CARE

The catheter, which is taped in the urethra immediately after operation, should be connected with a long piece of sterile rubber tubing which drains over the side of the bed into a sterile bottle. This bottle should be changed twice daily, at which time a clean freshly sterilized bottle is substituted. The slovenly practice of draining the catheter directly into a urinal is abhorrent and leads to certain difficulty.

According to our experience at the clinic it is useless to give a urinary antiseptic routinely. Such drugs might be of some value in a few cases, but in a number of other cases gastric disturbances and other harmful reactions will occur.

The urethral catheter generally can be removed on the third or fourth postoperative day. The patient should be able to void freely and in the majority of cases completely empty the bladder. It is important not to permit straining and forceful effort at urination or fever and chills might occur. Waking the patient to void every three hours during the first several nights is a wise precaution against overdistention of the bladder, which in itself might make urination difficult.

If there is any suggestion that urine is retained in the bladder after voiding, catheterization should be done. The decision to perform transurethral resection again in the small percentage of cases in which varying amounts of urine are retained should not be postponed too long. However, each case must be judged individually and no general rule can be applied.

A temperature higher than 101 degrees Fahrenheit at any time during convalescence occurred in sixteen per cent of the cases; in sixty-nine per cent the temperature did not rise above 100 degrees Fahrenheit. It has been stated by Caulk that one of the virtues of the punch type of resection is the minimal febrile reaction occurring postoperatively. In his opinion reaction is much greater following resection of the prostate gland with the electric loop type of resectoscope. My experience leads me to agree with these opinions.

RESULTS

The elimination or abatement of urinary symptoms is the principal thing with which the patient is concerned. Secondarily he is interested in the permanence of such relief. The other person most vitally concerned in the patient's welfare is his family physician. Not only must he console the relatives in case of operative fatality, but he must also shoulder some of the responsibility for continuance of symptoms if relief from resection is incomplete. Judging from the marked increase in patients presenting themselves for operation as well as the increase in those referred by physicians, there is no question in my mind concerning the high regard for transurethral resection by both patient and family doctor. The fact that the mortality is approximately only from a fifth to a tenth of that following prostatectomy of any other type is alone a remarkable recommendation. Furthermore, the short period of hospitalization is highly important in these days of depression, or "recession" if you prefer. During 1937 forty-three per cent of our patients spent one week or less in the hospital postoperatively; another forty-five per cent spent a second week or fraction thereof; ten per cent stayed from a fortnight to three weeks, and only two per cent remained longer. The longest stay was that of one patient who remained forty-seven days because of several painful complications. The mean stay of all of the 782 patients was 8.2 days.

A false impression prevails in the minds of some physicians with regard to the promptness of relief of urinary symptoms following transurethral resection. In my experience the thoroughness of resection is the principal determining factor. If a large proportion or the entire prostate gland has been removed, the patient will void easily, empty the bladder completely, and the prostatic urethra will heal in slightly over two weeks. During this interval there should be no tenesmus, at most a moderate day frequency, and a nocturnal frequency of not more than three times. The urine should gradually improve over its preoperative appearance and on gross inspection should be clear within two weeks after operation. By the third week there should be no nocturia unless renal damage causes an unusual nocturnal output of urine. Tenesmus, dysuria, and extreme frequency, if present, generally mean an incomplete operation and, unless the condition of the patient contraindicates, another operation should be advised. The complete elimination of pus from the urine can be expected in the large majority of cases; in a few cases with extreme vesical deformity, such as atonic sacculation, large cellule, or diverticulum formation, with or without secondary ureterectasis and pyelectasis of severe degree, a moderate amount of pus might persist in spite of all treatment. The administration of sulfanilamide for a period of days or weeks is sometimes wise in these cases. Surprising benefit often occurs.

MORTALITY

In five years and covering a series of almost 3,000 cases the mortality at the clinic has averaged less than one per cent. During the year 1937, however, there was a definite increase, for eighteen patients died out of a total of 782 on whom a total of 826 transurethral resections were performed. Thus the mortality rate was 2.3 per cent. Eleven of these eighteen patients were in the seventh decade, six were in the eighth decade, and the remaining one was in the ninth decade of life. The chief causes of death were cardiac and cerebrovascular accidents. Reviewing the year's work and considering the risks accepted it was indeed surprising that the mortality was not higher. The relief generally obtained, however, fully justifies advising transurethral operation on the prostate gland in spite of extreme degenerative disease of other organs. In very few instances need the chance of benefit be denied.

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THE BEDSIDE DIAGNOSIS OF CARDIAC IRREGULARITIES*

C. R. Thomas, M.D., Chattanooga

IT IS QUITE true that there are cardiac arrhythmias which are detectable only by mechanical aids, but the majority of those with which the average practitioner has to deal can be detected without any assistance except a stethoscope and sphygmomanometer. The value of electrocardiograms, like roentgenograms, depends on the ability of the person interpreting them.

Before beginning the study of each irregularity, certain general facts should be considered. First the age of the patient. Irregularities occurring in the first decade of life are practically always sinus arrhythmias. On extremely rare occasions, heart block may appear. With cardiac enlargement occurring during some acute infectious disease premature contractions sometimes occur in young children. Fibrillation is excessively rare before eighteen years of age, but its frequency increases as age advances.

The rate of the pulse is extremely important, for while it is not unusual to encounter a slow pulse in auricular fibrillation, especially under large doses of digitalis, it is wise to bear in mind the possibility of heart block when the pulse falls below fifty beats per minute. It is not uncommon to find quite slow pulse rates in athletes who have normal hearts and also in individuals with increased intracranial tension, jaundice, and certain febrile diseases. Sinus arrhythmias rarely occur in association with heart rates of a hundred beats and over per minute, and premature contractions are seldom met with in rates of 120 and over. Rates of 140 and over occur rarely except in auricular fibrillation, auricular flutter, and paroxysmal tachycardia.

The length of time the irregularity has persisted is of considerable importance, for practically all of the irregularities except auricular fibrillation and complete heart block have periods in which the pulse is quite regular for long periods of time.

The effect of exercise, rest, fever, and drugs has to be taken into consideration. Any factor that increases the ventricular rate has a tendency to diminish or obliterate the irregularity unless it is due to auricular fibrillation.

The question of whether or not the irregularity is regular, that is, the same type being present more or less constantly as in coupled beats, or whether there is a completely disordered rhythm, is very important. The intensity of the beats should be ascertained and also whether or not there is a pulse deficit. The type of pulsations in the veins of the neck should be carefully observed.

Solitary pulse intermittances, which should not be confused with the long pause following expiration in respiratory arrhythmias, are usually due to premature contractions or in very rare instances to heart block. In premature beats there is a long pause occurring in an otherwise perfectly normal rhythm. The premature beat is easily heard at the apex and gives rise to an early first sound and often to a second sound as well. In heart block the heart is silent.

Coupled beats or so-called bigeminal pulse result from several causes. If the ventricular beats are coupled and the couples are evenly spaced, the alternate beats of the normal rhythm have been replaced by premature contractions, the second beat of the couple being weak and not reaching the wrist, or a third ventricular contraction is lost and partial heart block is present. Still another possibility is that each third beat is replaced by a premature beat which can be easily heard at the apex, although the beat is not transmitted to the wrist. Tripled beats or trigeminal pulse occur for the same reasons as coupled beats except that the fourth beat of the normal rhythm is replaced by a premature contraction instead of the third beat, or the block is of the fourth instead of the third beat.

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*Read before the Tennessee State Medical Association, Nashville, April 12, 13, 14, 1938.

When the pulse rate is just half the ventricular rate it is practically always due to premature contractions, although it has been reported as occurring in alternation. There should not be any difficulty in distinguishing between the two, for in the premature contraction the ventricular beats are coupled, while in alternation they occur regularly. When there is a sudden and exact halving of the pulse rate and the ventricular rate is halved at the same time the condition is due to heart block.

The commonest arrhythmias encountered by the average practitioner and which he should be able to recognize are auricular fibrillation, premature beats or extrasystoles, heart block, paroxysmal tachycardia, pulsus alternans, auricular flutter, and sinus arrhythmia.

Few will deny that auricular fibrillation should head the list. It has been variously estimated that from sixty per cent to eighty per cent of all cases of cardiac failure at some time or other develop this irregularity. The walls of the auricle are said to be in diastole. Systole does not occur and the surface of the auricle is the seat of many rapid undulating contractions. Regular impulses are not carried to the sinoauricular node and the ventricles therefore receive very irregular stimuli. Most of these stimuli do not reach the ventricle, as about 200 impulses per minute is the extent to which these stimuli can be transmitted. The totally irregular ventricular rate varies as a rule from ninety to 160 beats per minute, but may be very slow especially when complete digitalization has been produced.

As might be supposed the two groups in which auricular fibrillation is most frequently encountered are the rheumatic and the sclerotic. The former group is seen earlier in life, usually from twenty-five to forty years of age, while the sclerotic is most often encountered in middle and advanced age. In the rheumatic group it occurs about equally in the two sexes and there is frequently some history of chorea, acute rheumatic fever, tonsilitis, and mitral stenosis. In the sclerotic group men are more often involved and there is usually definite evidence of arteriosclerosis, glomerular nephritis, cardiac enlargement, and hypertension.

The bedside diagnosis of this condition is relatively easy. A study of the pulse, the apex beat, the blood pressure, and the effect of the heart rate soon supply the necessary information. Because many of the ventricular beats fail to reach the wrist we are supplied with one of our most valuable signs, that is, a pulse deficit. This deficit at times is rather large. The extent of the irregularity is most evident when the ventricular rate is over 120 beats per minute. The radial pulse in addition to the deficit reveals beats of all degrees of intensity and a rhythm which is completely disordered. There is not any relation between the length of the pause and the size of the beat which follows it. The pulse may be said to be completely irregular in its irregularity. Blood pressure readings show that relatively few of the beats are of the same intensity.

At the apex the irregularity is even more evident than at the wrist. The sounds vary with the intensity of the beat. First and second sounds are heard in each systole which is strong enough to force the blood into the aorta, but if the force is insufficient the first sound may be the only one heard. The pulse in the jugular veins is usually synchronous with the apex beat. In mitral stenosis, the preexisting presystolic murmur loses its presystolic accentuation and is no longer confined to presystole. When it is remembered that in auricular fibrillation auricular systole does not take place it is readily seen that there cannot be a presystolic murmur. The murmur becomes early or mid-diastolic with the onset of fibrillation. It usually begins a little after the second sound and runs nearly to the succeeding first sound.

The aortic and pulmonary valves close when the intraventricular pressure and intra-aortic pressure become the same. Their closure produces the second sound at the apex. Blood does not flow into the left ventricle from the auricle until the pressure in the ventricle is below that in the auricle. Incomplete emptying of the ventricles due to general congestion probably plays a large part in the relation the mid-diastolic murmur of mitral stenosis bears to the second sound. Not infrequently this diastolic murmur is confused with the diastolic murmur of aortic insufficiency. The presence of the diastolic murmur at the aortic area and a Corrigan pulse should establish the diagnosis of aortic insufficiency. Mitral stenosis is commonly, aortic insufficiency rarely, associated with auricular fibrillation.

When the ventricular rate is fast we do not, as a rule, have any difficulty in picking out the signs just mentioned. However, when the ventricular rate is slow certain other tests may be needed. If the patient is able to be exercised a little by changing from a recumbent to a sitting posture, while still in bed, the heart rate may be sufficiently increased to determine whether or not the irregularity is increased which it will be if fibrillation is present, or whether it disappears which it will do if the irregularity is due to extrasystoles, partial heart block or sinus arrhythmia. The same effect may be noted in febrile patients or when certain drugs are used, especially amyl nitrate. It should be carefully noted whether or not the irregularity reappears when the pulse rate returns to what it was before the tests. A persistent cardiac irregularity lasting month after month and with evidences of heart disease especially with a rate of a hundred beats or more per minute is almost always due to auricular fibrillation.

From a standpoint of frequency extra systoles or premature beats should be considered ahead of auricular fibrillation, for relatively few people reach middle age without sometime or other manifesting this type of arrhythmia. These premature beats are of three types, namely, ventricular, auricular, and nodal, but it is not possible to differentiate them except by means of the electrocardiograph, and as for the most part this type has relatively little clinical importance; it is not worth while to put the patient to this additional expense. They may occur in perfectly normal hearts as well as in association with definite heart disease. These extrasystoles occur in individuals who are high-strung and nervous, who use coffee, tea, and tobacco to excess. This is especially true of tobacco. Extreme fatigue, either mental or physical, is apt to bring on this type of irregularity. It is never seen when the heart rate is 120 and over and rarely when the rate is a hundred. If the patient is made to exercise sufficiently to increase his heart rate to 120 these extra beats will entirely disappear only to reappear when the pulse rate returns to normal. This is also true if the rate has been increased by drugs. Changes in position are supposed at times to have the same effect.

The premature beats are most often ventricular and when a single premature beat occurs in a regular rhythm a cardiac impulse can be made out at the apex with two extra sounds, if the aortic valves are opened, and also a weak premature beat can be made out at the wrist. If the beat is too weak there is nothing felt at the wrist to go with the extra sound at the apex. As previously stated premature beats account for most of the bigeminal, trigeminal, and similar types of pulse irregularities. By very careful observation it can be made out that in premature beats of ventricular origin the time interval is the same as that of two beats of a normal rhythm. Often these extra beats occur with sufficient frequency and force to keep people from getting their proper sleep and cause considerable anxiety and annoyance.

Heart block is to be distinguished from bradycardia or slow pulse by the fact that in simple bradycardia the normal relation between the apex beat, the radial pulse, and the pulsations in the vessels of the neck is preserved, while in heart block this is definitely disturbed. In heart block there is a delay in or failure of impulses to reach the ventricle from the auricle. Slight changes in the conduction time are not demonstrable except by mechanical means. Reduplication of the cardiac sounds is strongly suggestive of delayed conduction and if the patient is known to have been taking a lot of digitalis or to have had rheumatic heart disease this suggestion becomes a strong probability. When the auricles contract the sound is of muffled character which in normal hearts is not audible. It is often heard, however, when the time between the auricular and ventricular systole is sufficiently delayed. At times a double second sound can be heard because the auricular systole occurs in early diastole. Contraction of the auricle midway in diastole will be accompanied by a thrill and murmur if the patient has mitral stenosis, and it should make us suspect both the stenotic lesion and an early heart block.

The block may occur as a single drop beat or a two to one, or three to one, or higher ratio, or complete block. In the single drop beat the heart is otherwise regular and a beat is dropped out, leaving a long pause. There is neither palpable radial pulse or a sound audible at the apex. The pause is often the length of two normal beats, but frequently the beat following the pause is a little earlier. As in premature contractions the irregularity will disappear when the heart rate is increased by either exercise or drugs, but there is this difference, in premature beats a weak beat which is not transmitted to the wrist can be heard at the apex when the heart rate returns to normal, while in the drop beats the ventricle is silent. Two to one, or three to one, or other types of block occur where a definite number of auricular contractions occur to each ventricular contraction. In complete heart block the auricles and ventricles beat independently of each other. The rate in two to one block is usually around forty beats per minute, while in complete block the rate is slower and at times is ten or less, the average being between twenty and thirty beats per minute. The auricles usually beat at about twice the rate of the ventricles. A sudden halving of the heart rate which can be doubled on exercise is indicative of heart block. Exercise has little or no effect if the block is complete. The vagal effect being practically absent, the drugs usually used to increase heart rate are without effect. Where the intensity of the first and second sounds changes from beat to beat heart block should be suspected. The rapid jugular pulse in comparison to the ventricular rate as well as the variation in the venous pulse are also indicative of heart block. Partial heart block is usually not permanent, while complete block once established is apt to remain so. In complete block each ventricular beat is accompanied by a first and second sound. The blood pressure shows a sustained high systolic and a low diastolic level.

Often people with relatively high degrees of complete block are able to pursue their occupations with very little discomfort. This is especially true if there is not any marked damage to the heart. When the pulse rate becomes extremely slow the symptoms of the well-known Stokes-Adams syndrome occur. These symptoms are extreme slowness of pulse, unconsciousness, twitching of the face and upper limbs, pallor, cyanosis, and stertorous breathing. There may not be more than one beat every fifteen seconds. Death not infrequently occurs. The attacks usually come without warning. The loss of sphincter control, muscle soreness, and sleepiness usually seen in epilepsy do not occur. The mild symptoms of heart block are dizziness, faintness, temporary loss of consciousness, slow pulse, and pallor. When a partial block is suddenly converted to a complete block any of the symptoms just mentioned, even the Stokes-Adams syndrome, may occur. Often the change from a normal rhythm to a partial and then complete block and back again to normal will occur over a period of weeks during which time the patient may have any or all of the symptoms previously mentioned.

Simple paroxysmal tachycardia is not to be confused with the rapid regular rhythm produced by exercise, encountered in fevers, or found in conditions such as hyperthyroidism. In these conditions the impulses arise in the sinoauricular node. In paroxysmal tachycardia the impulses arise from an abnormal focus. The impulse may arise in the auricle or ventricle like a series of premature beats. It varies in its duration and severity. Attacks may be mild in character and last only a few minutes or for a week or more and the rate may exceed 200 per minute. Usually the rate is about 160 to 180 and the duration is from about one to two hours. The attacks usually start abruptly and end in the same way. The rate is practically constant, is not influenced by change in respiratory rate or change in position, although at times a change in position may cause cessation of the attack. Pressure of the vagus in the neck may cause an abrupt return to a normal rhythm, but is more often without any effect. There are commonly anginal symptoms, and if the attack continues for any length of time the heart may become dilated and the liver and lungs congested. In severe attacks there is often an intense headache. There are relatively few conditions which are more alarming to the patient and the family. The diagnosis rests on the fact that there is a rapid regular ventricular rate uninfluenced by rest and respiratory rate and which starts and ends abruptly.

Pulsus alternans occurs rather more frequently than was formerly supposed. It is found most often in association with angina pectoris, arteriosclerosis, especially when there is hypertension, myocardial degeneration, and after digitalization. The ventricular rhythm is regular, but the beats alternate in strength. It occurs more often when the rate is fast and is frequently seen in paroxysmal tachycardia. When it occurs for only a few beats it is of little importance, but when it becomes constant it is a bad omen. It is practically impossible to diagnose by auscultation of the heart or by palpation of the radial pulse, but is easily detected by applying the cuff of the blood pressure apparatus and then raising and lowering the pressure. As the strong and weak beats alternate the rate can be halved or doubled by increasing or diminishing the pressure in the cuff. The variation in pressure is not marked, as a rule, but is sufficient to be easily detected.

Auricular flutter is due to a circular movement around the vena cava. The auricular rate varies from 200 to 320 beats per minute. The wave is said to be in one plane and regular so that the ventricle receives excessively rapid but regular impulses. As it is impossible for the ventricle to maintain any such rate, it is usually protected by a two to one heart block, although a four to one or even complete heart block has been known to occur. It may persist for a long time and should be suspected when a regular pulse rate of 120 or more exists for over a period of months or even years. The rapid pulsations in the veins of the neck, the lack of influence of posture, exercise, and rest, and the fact that the rate is slower than in paroxysmal tachycardia and there is not the sudden onset and abrupt ending make the diagnosis probable especially if the condition is encountered in elderly individuals. A slow ventricular rate with rapid pulsations in the vessels of the neck should make us suspicious of this condition.

Sinus arrhythmia, while perhaps the most common of the irregularities, has little or no clinical importance and in fact has been claimed to be an evidence of a sound heart. It is almost always confined to childhood, although it may occur in extremely nervous individuals who are older. There is a normal relation between the ventricular beat, radial pulse, and pulsations in the vessels of the neck. Inspiration gives rise to an acceleration of the pulse rate, while expiration causes a slowing. There may be a rather long pause at the end of expiration which resembles a drop beat except for the fact that drop beats do not constantly occur in expiration. Sinus arrhythmias are not associated with phases of respiration in all instances, but all of them are to vagal influence. The sudden and marked slowing of the heart rate associated with fainting is an example and is thought to be the commonest cause of fainting. Sinus arrhythmias, like premature contractions, disappear when the heart rate is sufficiently increased.

Just a brief word as to treatment. Auricular fibrillation is the prime indication for digitalis and in some instances quinidine. Extrasystoles are best treated by prohibiting tobacco and coffee and avoidance of strain and excitement, and when necessary small doses of quinidine may be given over a long period of time. Paroxysmal tachycardia will usually respond to syrup of ipecac in sufficient doses to produce vomiting. Heart block often responds well to ephedrine over long periods of time and also adrenalin. Quinidine has been recommended and used with some success in auricular flutter. The other irregularities require no treatment.

DISCUSSION

DR. DAVID W. HAILEY (Nashville): Mr. President, Members of the Tennessee State Medical Association, and Guests: I feel that Dr. Thomas has given us a very timely and lucid presentation of this subject, and I intend only to emphasize a few points.

The diagnosis of an arrhythmia is important for the intelligent management of a case. Of first clinical importance is the recognition of auricular fibrillation and its true evaluation. A rapid, grossly irregular rhythm with an appreciable pulse deficit, past history of rheumatic fever or chorea, the presence of mitral stenosis, will lead to the correct diagnosis. If any two of these are present the other can be predicted in the vast majority of cases. Auricular fibrillation frequently occurs in hypertensive heart disease, coronary artery disease, and hyperthyroidism. The paroxysmal type necessitates the exclusion of hyperthyroidism and gall-bladder disease. The frequency of its association with hyperthyroidism has been emphasized. Exercise tends to increase this irregularity, and helps to distinguish it from extrasystoles.

Auricular flutter is a less common arrhythmia and probably does not indicate as serious cardiac damage, though it usually occurs in patients with organic heart disease. It is usually associated with a two to one heart block and a ventricular rate of 100-170 with regular rhythm. The degree of block is occasionally changed by exercise, so if we count the pulse rate accurately before and after slight exercise, we may find the rate exactly twice the previous rate and then suddenly returning to the original rate. An occasional case shows shifting degrees of block, two to one, three to one, four to one, giving a pulse which may simulate auricular fibrillation, but it is rare for this to continue after several observations. . . . Carotid sinus pressure usually causes a temporary slowing with a gradual return to the previous rapid rate. In this arrhythmia the auricular rate is usually from 200 to 350 and the ventricular rate half that unless treatment has been instituted. Auricular flutter occasionally develops during acute coronary thrombosis, rheumatic fever, pneumonia, and hyperthyroidism.

Paroxysmal auricular tachycardia indicates still less serious disease; in fact one should not predicate heart disease on its presence. In this condition the rate is usually 150 to 250. There is a history of sudden onset. During attacks this rate is precisely regular and constant while the attack persists. Change in position, holding the breath, carotid sinus pressure, ocular pressure, etc., fail to influence the rate unless they bring about a cessation of the attack. This constancy of rate is one of its chief distinguishing characteristics. If the heart is counted carefully with a stethoscope at intervals of a few minutes, and each time found to be precisely the same even though the patient's position has been changed and the various methods of stimulation have been instituted, we may feel quite certain we are dealing with auricular tachycardia.

Other characteristics are the frequency with which attacks may be abruptly stopped by carotid sinus pressure, ocular pressure, etc., and the lack of serious cardiac embarrassment in the presence of such a rapid rate unless it occurs in a previously damaged heart, the attack is unduly prolonged or the rate is extremely rapid, say 250.

Ventricular tachycardia is associated with serious heart disease, generally coronary thrombosis. It may be difficult or impossible to distinguish this from auricular tachycardia by bedside methods. The rate is usually 180 to 200. The findings which may lead to differentiation are: (1) on auscultation one may detect an occasional irregularity in rhythm, whereas in auricular tachycardia there is a precise regularity; (2) the first heart sound may show occasional accentuation, muffling, or reduplication. Various methods of vagus stimulation fail to influence the rhythm.

Premature beats or extrasystoles is the most frequent arrhythmia we are called upon to interpret. All authorities are agreed that a diagnosis of heart disease must depend on other findings. The only point I wish to make is to call attention to the light they may throw on previous attacks of paroxysmal arrhythmia from which the patient may have suffered. If one finds them present in a patient who gives a history of having had attacks of paroxysmal arrhythmia, one is justified in assuming that the attacks were of one of the ectopic rhythms, such as auricular tachycardia, flutter, or fibrillation. If extrasystoles occur in a patient with mitral stenosis, one may predict that the onset of fibrillation will not be far removed. Increasing the heart rate by exercise usually abolishes extrasystoles.

There is increasing interest in the finding of patients with excessive carotid sinus irritability. Soma Weiss has called attention to this group of cases. They are usually patients with hypertension and arteriosclerosis, and the normal irritability of this reflex may be increased to the point that carotid sinus stimulation causes giddiness, or even fainting due to the prolonged asystole or sinus pause induced. This reflex is stimulated by a firm pressure over the carotid bulb at the bifurcation of the common carotid artery. Pressure is made on first one side and then the other for fifteen to twenty seconds.

DR. W. H. WITT (Nashville): Mr. Chairman, no subject can be brought before this association more important than the bedside study of heart disease, and probably nothing more important in that field than the irregularities that are found. It is very important for a patient to be able to be reassured that he has no organic heart disease, and in these times when the newspapers are full of medical talks, most of them good, but, to my way of thinking, not desirable, people have a great tendency to get their minds on themselves and their health, which is not always to their advantage. The conditions that often upset people, and that are essentially harmless are the ones that have been very nicely referred to by the essayist, namely, ordinary premature systoles and paroxysmal tachycardia. It is exceedingly important that those conditions be recognized and they can practically always be recognized at the bedside and their proper evaluation made.

Of all the cardiac irregularities, those two I think are more apt to be misunderstood by what we sometimes call the average practitioner.

I believe there are a good many people who have not a very clear conception of what is meant by paroxysmal tachycardia. It is commonly not at all a serious condition, and it is quite capable of disturbing the patient's piece of mind very much. The same thing applies to ordinary premature systoles.

I really rose to call attention to one feature about paroxysmal tachycardia. That is that not invariably is the rate perfectly regular in force and not invariably is there the same quality to the sounds that we hear with the stethoscope. More than once I have been undecided, in using the stethoscope, whether I was dealing with a case of paroxysmal tachycardia or a heart beating just one-half as fast. In other words, I was not sure whether I had a paroxysmal tachycardia, we will say, of 180, hearing only the systole, or whether I had a pulse rate of ninety, the spacing being more like that of the fetal heart. Under circumstances like that it is important to be able to know. The point that I wish to make is that almost invariably with the proper light, the proper position, you can decide that question by looking at the carotid area. In other words, with paroxysmal tachycardia you see a very rapid carotid pulsation, and that establishes at once the fact that you are not dealing with a pulse of ninety, an ordinary rapid pulse with some peculiarities about it, but you are dealing with one twice that fast; in other words, a paroxysmal tachycardia. On one occasion where I was undecided as to whether I could see anything at all in the neck, I exposed the abdomen and could see the abdominal aorta beating with great rapidity well over 200. I think this is a clinical observation that really is worth something, and on more than one occasion it has helped me to decide with absolute certainty that I was dealing with a case of paroxysmal tachycardia.

Lewis and others teach that pulsus alternans is not infrequent in paroxysmal tachycardia. This would account for the alternating quality of the sounds, so that every other one might be interpreted as a second rather than a first sound. At least that is my opinion.

DR. W. R. CATE (Nashville): Dr. Thomas has beautifully covered the irregularities that are commonly met with in heart disease. I think of all conditions about the heart that are met with frequently and cause disturbance in the mind as well as the physical status of the patient, irregularities probably take first place.

There is no need of saying anything further about the common irregularities that were covered by Dr. Thomas and the others who have discussed the paper. Dr. Hailey mentioned one condition which has interested us very much in the past few months because of several cases that have been met, and that is the irritable carotid sinus. Probably the disturbance caused the patient by irregularities pertains more often to the brain or the central nervous system than any other type of heart conditions; in other words, dizziness or vertigo, faintness are common symptoms in irregularities of the heart.

Irritable carotid sinus is one condition with which very few doctors are familiar or consider. The carotid sinus is the term used to designate the plexus of nerves around the carotid bulb at the angle of the jaw on both sides. It has a very marked influence on the cardiac rhythm or rate, and if it is irritable and overactive will produce a marked slowing of the rate with a sense of dizziness and faintness and at times actual convulsions.

Just briefly to illustrate what I mean, we see on the upper tracing in the electrocardiogram that the rate is eighty-five a minute; on pressure over the carotid sinus the rate immediately dropped to forty-two beats a minute, and the patient had a mild but definite convulsion, clearly a repetition of the type of attacks that he had been having. He had no organic heart trouble that could be demonstrated other than a slight first degree heart block, and this condition was entirely relieved by the use of tincture of belladonna, which is a specific for this type of condition.

Here is the chart of a patient that had a rate of eighty-two and on pressure over the carotid sinus the heart went into complete asystole for forty-two seconds, with faintness and convulsive twitching of the muscles of the face. This condition is met with very often in elderly people. It is usually attributed to cerebral arteriosclerosis or other such condition. It closely simulates heart block because oftentimes when one first examines or feels the pulse, the rate may be ninety and suddenly, while examining the patient, the rate will drop to forty or thirty-six and the patient becomes very faint and giddy, symptoms suggesting heart block. If the possibility of an irritable carotid sinus is kept in mind, however, the diagnosis can be made without difficulty and many mistakes avoided.

DR. CHARLES R. THOMAS (closing): I appreciate very much the discussion. I did not want to confuse the situation any more than was necessary so I took the simplest types of irregularities I could think of. I thought that I brought out Dr. Witt's observation in my paper. Evidently I did not. That is the observation of impulses in the neck.

I failed to say anything about the impulses in the abdominal aorta and I am very glad he brought that up.

I want to thank Dr. Cate and Dr. Hailey for their discussions.

There are two things that I do want to reemphasize. One that most often causes confusion is the idea in the minds of many men that in order to have an auricular fibrillation it is necessary to have a very rapid pulse. That is not true at all. Second, I just want to say a brief word in favor of the use of syrup of ipecac in paroxysmal tachycardia. I have found relatively few cases that would not respond to sufficient doses of syrup of ipecac. Usually small doses of ephedrine over a long period of time will get rid of the common extrasystoles, and I think it is extrasystoles that give patients most concern and they are one of the things that not infrequently doctors, who are not familiar with them, will allow to influence them in turning down men for insurance because of this particular type of irregularity. Where we have electrocardiographs available to make very accurate diagnoses, it is a relatively simple matter, but a great many people are not capable of interpreting electrocardiographic tracings and too electrocardiographs are not always available. Before committing the unpardonable sin of getting a man with a black ball on his insurance record because of a type of simple irregularity, I think it would be well to refer them to a cardiologist.

PRINCIPLES IN THE TREATMENT OF FRACTURES OF THE SMALL BONES OF THE HAND*

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IT MIGHT SEEM on first thought that I should apologize for bringing to your attention a subject which might be considered of such minor importance. However, due to the fact that the human hand is such a valuable asset to the working man, it is imperative that the best result obtainable, both anatomically and functionally, is the least that either the doctor or the patient should expect. Even our best efforts may terminate in some degree of permanent impairment which will physically handicap either the laborer or the artisan. Anything short of our best efforts is almost certain to lead to a poor result. Disability in the hand may be reflected further than the individual himself in that it may force his employer to rehabilitate him and put him on a different and unfamiliar type of work, and therefore cause a very real, but likely unseen, expense to his employer. The insurance carriers are also vitally interested in the result because any permanent impairment will cost them in dollars and cents.

Fractures of the hand are usually considered as minor surgery; nevertheless they represent a major portion of the industrial surgeon's daily routine. Discussions such as these are relatively few in the literature as compared with discussions of other surgical problems. It may be we have been neglecting this field.

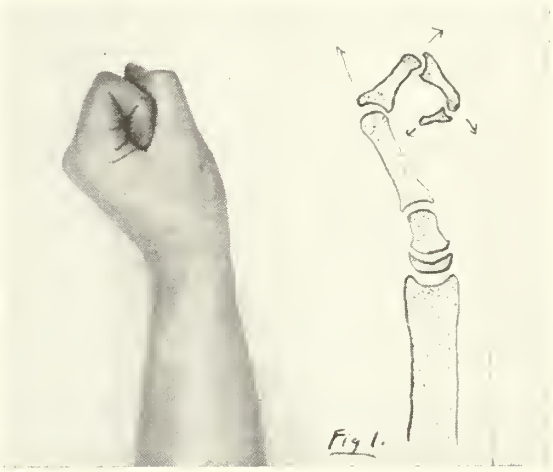
Without the understanding of the structure and function of the hand, it is impossible to attack the problem of restoration with any degree of certainty concerning the final result to be obtained. This, to my mind, is of such importance that my discussion will, for the most part, be a review of the involved anatomy and physiology of the hand, because only by its understanding can the interpretation of the pathology be understood, and following this the course of treatment determined.

The following principles may be laid down:

1. The function of the hand is mainly one of grasping, *i. e.*, an organ of prehension. To grasp requires mobility of its various components, proper curvature of its parts, and last but not least, strength.

2. The normal clenched fist is the position of greatest strength in the hand, and by restoring the parts to this position all the requirements for a good result will be met.

3. The exceptions to this rule will be pointed out.



Cut 1, Fig. 1.—Position of strength of the hand. (Clenched fist, lateral view.)

You will note here that in the clenched fist, which is the position of greatest strength of the hand, the metacarpal bones are in a position of approximately forty-five degrees of extension in relationship to the straightened forearm. You will also note that the proximal phalanges of the fingers are flexed approximately ninety degrees with respect to the extended metacarpals. You will further note that the middle phalanges are flexed approximately 140 degrees in relationship to the proximal phalanges. And finally you will note that the distal phalanges are flexed approximately seventy degrees in relationship to the middle phalanges; and also that the distal phalanx is approximately parallel to the proximal phalanx. You will further note that these same relationships are present in the thumb, but that the thumb in its entirety is placed at a ninety-degree angle to the remainder of the fingers.

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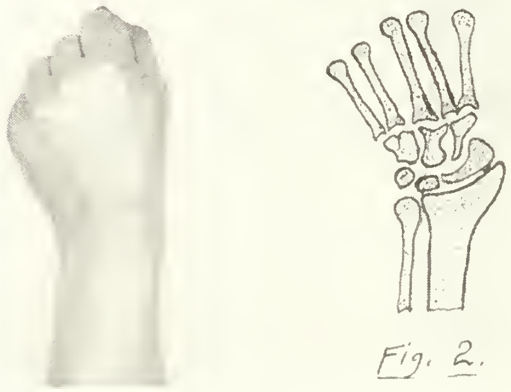
*Read before the Tennessee State Medical Association, Nashville, April 12, 13, 14, 1938.



Cut 1, Fig. 2.—Clenched fist (dorsal view.)

On viewing the hand from the dorsum in its position of strength, you will note that it is in moderate ulnar deviation. If you will clench your fist and note the position of the component bones you can remember that this illustrates the position of splinting of most of these fractures because our aim in the treatment of fractures of the hand is to regain its strongest possible functional position. The position of strength, and the direction of the splinting and traction, is in the direction of these normal relationships. There are, of course, some deviations from this general scheme, but for the most part they are true.

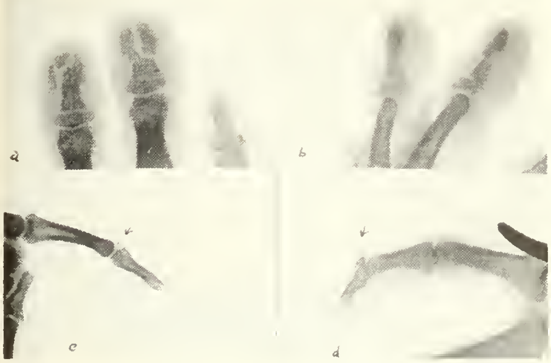
When a patient comes into the office, you should first ascertain how the fracture was produced. This may help you later in planning corrective treatment. Secondly, a clinical examination should be made of the fractured member, but most important is the X-ray examination to determine the extent of the injury and the exact relationship of the fragments of the fracture. Following the diagnosis of fracture, you may find that certain ones will need some type of reduction, but in my experience approximately sixty per cent need no reduction at all. In this latter type the finger is immobilized in the position of strength. In those cases requiring reduction, I believe it is very imperative that a good anesthesia should be obtained. It is impossible to satisfactorily reduce a fracture without complete anesthesia of the part. In fingers, this is easily accomplished by a nerve block. In the metacarpals, infiltration of novocain at the fracture site works best in my hands.

In those cases where the fracture has been caused by tortion (that is, a rotation of the finger) the fractures are generally of a spiral type and although reduced, there is nothing to maintain the reduction. This type of fracture can be held reduced only by the use of some type of traction. You may use any type of traction which you choose. For the most part, I find that adhesive tape and rubber bands work wonderfully well, but it is possible to pass a piece of silkworm gut or stainless steel wire through the fleshy tip of the finger, and an ordinary straight surgeon's needle may be drilled through the distal phalanx, if you prefer skeletal traction. The Japanese cage is not recommended because the pressure produced may cause a necrosis of the underlying soft tissues.

The padded tongue blade splint with the finger in extension is a type of treatment that has been handed down to us and which is probably more extensively used than any other. I do not condemn its use in all cases, but for the most part, it has no place in the treatment of these fractures because, as I have shown you above, it does not place the finger in the position of strength. In those cases of a simple fracture without displacement and without malalignment of the shaft of the phalanx, it is probably just as good as anything else.

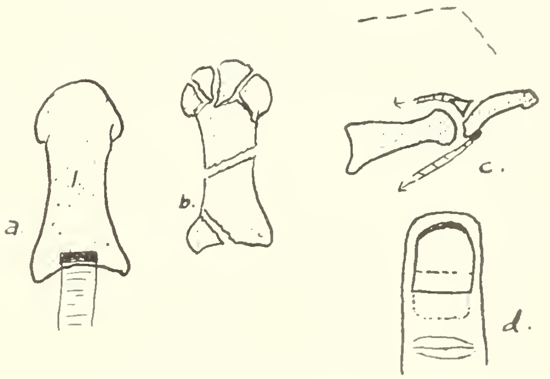
In discussing fractures of the fingers, it is probably best to discuss them from the standpoint of the segments involved. I will start with the distal phalanx and work back to the hand.

Cut 2, a and b.—Distal phalanx. The most common type of fracture of the distal phalanx is a comminution of its outer half.

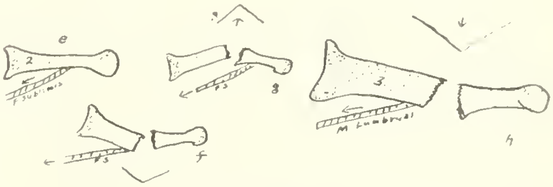


You will recall that both the extensor and flexor tendons insert at the base of the distal phalanx, and that muscle pull, for the most part, plays no role here and therefore displacement is usually not a complicating factor. Because of this the use of traction is rarely necessary in the treatment of fractures of the distal phalanges. If the fingernail can be preserved, it acts as a most effective splint and is probably all that is necessary. I am very careful to preserve as much of the nail as possible. Frequently, however, the nail is so loosened that its removal is imperative. In many cases there is a rather marked effusion of blood under the nail, which causes a great deal of pain. I do not favor the drilling of a hole through the nail, but find that one may easily push back the nail fold far enough to get a scissors point under the proximal portion of the nail and cut off a large enough segment to secure adequate drainage. I believe by giving adequate drainage, the incidence of infection is lessened as compared with a small drill hole which lets out some blood, but usually becomes plugged with a clot, preventing free drainage. Fractures of the shaft with displacement are straightened under local anesthesia and splinted, usually with adhesive tape only.

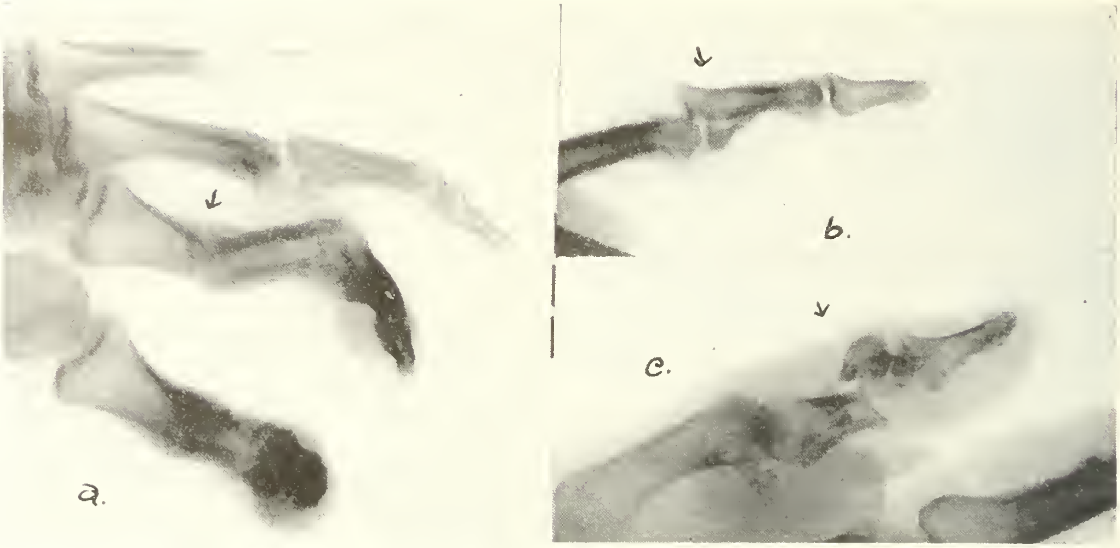
Cut 2, c.—There is a special type of fracture which occurs in the distal phalanx in the neighborhood of the joint which is caused by marked flexion of the finger, and the tense capsule of the joint pulls off a small fragment of bone. This is the so-called baseball finger. At times the capsule of the joint alone is torn and no fracture is found, but in either case, the distal segment falls down in flexion and it is impossible to actively extend it. This fracture represents one of the exceptions to the rule of splinting the finger in flexion. This fracture should be splinted *immediately* in as much hyperextension of the distal joint as possible, and this position must be maintained for a period of at least six weeks. The aluminum Lewin splint is excellent for this purpose. If not so splinted and not immobilized for a sufficient period (Cut 2, d) it will result in the finger not being able to be fully extended at the distal joint. In changing the splint care should be taken to keep the distal segment hyperextended during the process. The patient should be warned not to remove the splint.



Cut 3, a, b, c, d.—These diagrammatic drawings summarize the principle involved in fractures of the distal phalanges.



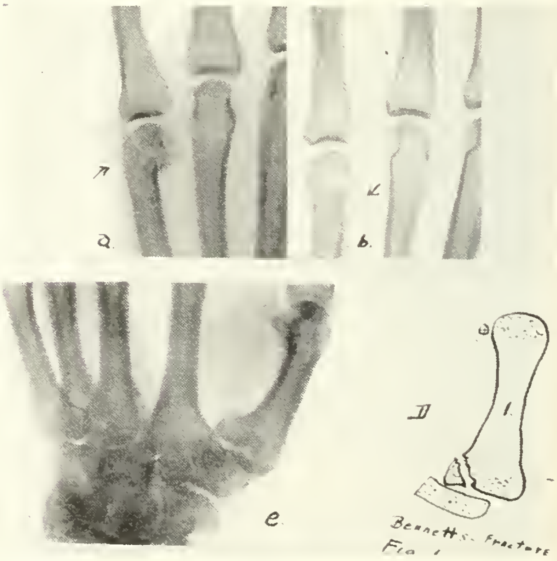
Cut 3, e, f, g, h.—Middle phalanx. The rule here is to splint all fractures in the position of strength. There is an exception to the general rule due to the fact that the fracture may be proximal or distal to the insertion of the flexor sublimis tendons in the middle of the shaft of the middle phalanx. This fracture principle was pointed out by Drs. McNeely and Lichtenstein.[1] Fractures of the middle phalanges are not common. As you will note from this slide, those fractures which occur distal to the

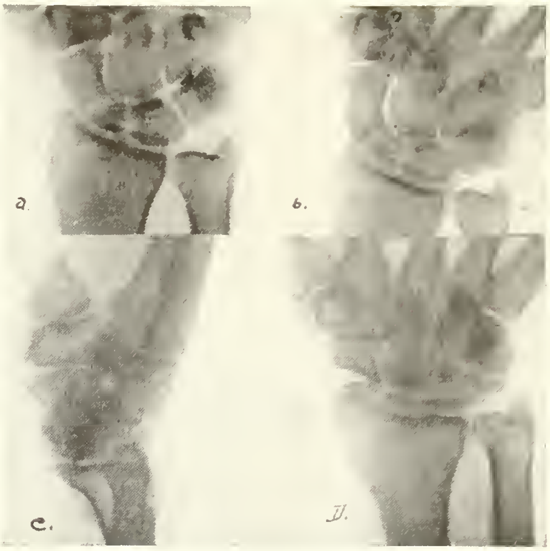


insertion of the tendons of the flexor sublimis must be splinted in flexion (Cut 4, a). If the fracture occurs proximal to the insertion of the flexor sublimis, it should be splinted in extension. (Cut 4, b.) This represents the second exception to our rule.

Proximal phalanx. It is in the proximal phalanges that we find most of the fractures caused by tortion (Cut 4, c) and it is in these phalanges, therefore, that the use of continuous traction will be found to have to be resorted to most frequently. And while speaking of traction, let me digress long enough to state that in my experience continuous traction of an uninjured joint of a finger most often results in some impairment of function of that joint. This impairment of function may clear up in a period of months, but it is a rather disconcerting aftermath of the treatment. Boehler[2] attributes this stiffness to traction of the joint in extension, but I have been unable to get by without some degree of it even when the joint is pulled in acute flexion. At this point, I would also like to call attention to the fact that I mentioned above, that the thumb is normally turned at a ninety-degree angle to the rest of the fingers, and traction in the thumb should aim to pull it toward the base of the little finger. It should be remembered that the most powerful flexors of the proximal phalanges are the lumbrical and interosseous muscles which flex the first phalanges at the metacarpophalangeal joints, and after fracture they act unopposed to flex the proximal fragment.

Metacarpals.—As I stated above, the metacarpals should be splinted, and if traction is applied, it should be applied in the direction of forty-five degrees extension of the metacarpals in relationship to the extended forearm. A rather troublesome fracture is a fracture of the distal end of the metacarpal (Cut 5, a) which may or may not involve the metacarpophalangeal joint. This is the type of fracture so frequently seen in boxers. Reduction here is not very well maintained by ordinary splinting and this fracture usually requires con-





a—"Fracture of carpal scaphoid five weeks after injury without treatment."

b—"Same case after six months' immobilization in plaster."

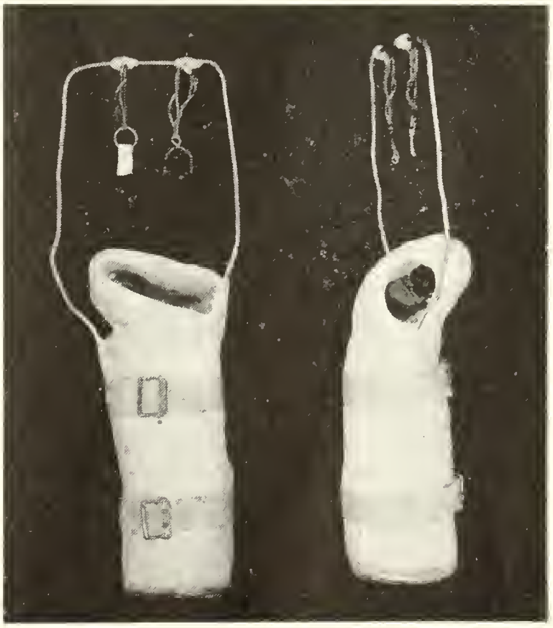
c and d—"Traumatic arthritis due to untreated fracture of carpal scaphoid—late result."

tinuous traction. (Cut 5, b.) Fractures of the shafts of the metacarpals are treated with the metacarpals in extension and proximal phalanges flexed ninety degrees in relationship to them. Due to the position of the thumb, this would mean with the thumb metacarpal in wide abduction. It sometimes happens that fractures of the shafts of the metacarpals cannot be reduced or reduction maintained by splinting or by traction, and the malalignment is such that a deformity will result. Also in this location it is not so very uncommon to have the extensor tendon, which lies on top of the metacarpal, fall between the ends of the fragments. When this occurs the only solution is open reduction. If the tendon is caught, it can easily be removed from between the ends of the bone by an incision on the dorsum, and if the fragments will not stay reduced, a small drill hole should be placed on each side of the fracture and the fragments tied together with absorbable suture material.

Bennett's fracture (Cut 5, c, d) is a very troublesome type of fracture which occurs at the base of the first metacarpal. The fracture and tearing of the ligaments cause a fracture-dislocation toward the dorsum and outward. When reduced it immediately slips out of place again unless immobilized by a plaster arm cast which holds the entire thumb in wide abduction, together with sufficient lateral pressure at the base of the first metacarpal to prevent redislocation. The cast should be left on for three to five weeks.

Carpal Bones.—I am not going into this subject but very briefly because it is a subject which would necessitate a long discussion in itself. Suffice it to say that the most common fracture of the carpal bones is the fracture of the navicular (scaphoid). (Cut 6, a, b). This is an important and very disabling fracture due to the fact that the blood supply in this bone is very limited and that the line of fracture tears its nutrient vessels and unless the fracture is splinted long enough (six weeks to six months) motion of the wrist will tear the newly-formed nutrient vessels and the bone undergo necrosis. This fracture should be splinted with the hand in the position of function, and kept that way until there is X-ray evidence of healing. If not immobilized until healing occurs, the bone will be absorbed, a traumatic arthritis and disabled wrist will result (Cut 6, c, d).

An important point to remember is that the navicular may congenitally consist of two separate bones, the so-called bipartite



type. This condition usually occurs in both wrists.

Cut 7.—I show here a plaster cast, and incidentally I use plaster exclusively because unless the splint fits (and a trade splint rarely will fit) immobilization is impossible. You will note that the forward tongue of the splint fits up into the palm to its proximal flexion crease. This is just behind the heads of the metacarpals and allows free motion of uninjured fingers. In putting on this splint a plaster reel is placed from the proximal crease up the palmar surface of the forearm. A few turns of plaster are then used to secure this palmar splint to the hand and arm. Heavy wire is bent in the shape of a U and the limbs of the U are slightly wider than the width of the forearm to prevent pressure. This wire is somewhat heavier than coat hanger wire because I have found that coat hanger wire is not strong enough to withstand and maintain sufficient continuous traction. You will further note that the bridge of plaster between the thumb and index finger is narrow. This is important because if it is wide it will cause pain and also if it is wide it will prevent the thumb being flexed into the palm. After this splint is applied you will note that there is a free use of all fingers except that one which is immobilized. This is important because the more we can keep the fingers in use, the less temporary disability we will have in the hand.

In regard to compound fractures, and these are very common, I have some very definite ideas which I must carry out to prevent trouble. I feel that every compound wound should be immediately debrided, cleansed and sutured without drainage as soon as it is possible to do so, and this is generally before reduction and splinting are attempted. And when I say cleansed I mean to scrub with green soap and water and to get out all the dirt you can by flushing thoroughly with saline solution, and that portion of dirty tissue which you will be unable to cleanse in this manner should be cut away with a sharp knife. At no time and in no place do I believe there is any indication to put any type of an antiseptic in an open wound. You may paint the skin at any time and with anything, but, gentlemen, please do not put antiseptics in open wounds. The use of an antiseptic in solution strong enough to kill bacteria will kill normal tissue and this dead and injured tissue acts only as a place for the culture of bacteria. The mercurial solutions which are in vogue today do not come in very close contact with deep tissue because they are so diluted and washed away by the blood that they do not remain in contact long enough to kill either the tissue or the bacteria.

In regard to the period of immobilization of fractures of the phalanges, clinical healing usually occurs in about three weeks, but as pointed out by Smith and Rider,[3] evidence of healing as shown by the X-ray may normally take from six months to a year, but averages five months.

Injuries to tendons and nerves will not be discussed at this time.

SUMMARY

1. Position of extension of the metacarpals and flexion of the fingers is the general scheme of treatment in small bones of the hand.

2. The exceptions to this rule have been pointed out.

3. Treatment of open wounds is stressed.

4. Care should be taken not to immobilize any joints where such can be avoided.

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DISCUSSION

DR. R. R. BROWN (Nashville): Gentlemen, I am sure we should be grateful to Dr. Sheridan for having reviewed the so-called simpler fractures that we run into more commonly and about which, as he states, there is very little in the literature. The position of election of course is an old question, but the doctor has covered it eloquently, and it means a great deal in the cases where the fractures are close to the joints. The closer to the joint the fracture is, the more apt there is to be some impairment of that particular joint, and consequently if the extremity is splinted in the best position or the position of election, if you please, then what impairment of motion there is is of the least disadvantage to the patient.

I should like again to emphasize the importance of a thorough debridement in compound fractures. I do not think there is anything that will be as efficacious in preventing infection as a thorough mechanical cleansing of not only the wound itself, but the entire circumference of the extremity at the site of the fracture.

I do not know that there is anything that I can add at all to the numerous fractures that the doctor has discussed. He covered the scaphoid bone of the carpal bones of the hand, and I shall limit most of my remarks to the fractures of the carpal bones, especially the semilunar and the scaphoid. Seventy-five per cent of the fractures of or injuries to carpal bones are to the semilunar and scaphoid.

I have been fortunate enough to reduce by manual manipulation four cases of dislocation of the semilunar of the wrist and I would like to show these slides at the present time.

(Slide). The first case I wish to show is one of the fractures of the scaphoid bone very similar to one Dr. Sheridan reported in that it was four weeks old before I saw it. I splinted this with prolonged splinting. This picture was made exactly a year after his original injury. He was splinted, though, only twelve weeks before all of the symptoms, all the pain and stiffness disappeared, and even though that is not a firm bony union, it is a sufficient union that the pain and limited motion of the wrist disappeared.

(Slide). I wish to show this case. This is the A-P view in which there is a fracture of the scaphoid and a dislocation of the semilunar. The dislocated semilunar here, the fractured scaphoid there. In reducing the semilunar you notice that the area of separation of the fragments of the scaphoid was much lessened.

(Slide). Here we see the picture beforehand with the semilunar out and the articular surface reversed or turned here, and here you see it after it is reduced in its normal position.

(Slide). Here we see one that is entirely out and reversed; here it is reduced.

(Slide). I was anxious that somebody else try this plan, and one of our neighboring surgeons called about this particular case, saying that he had a semilunar dislocated and wanted to know about taking it out. I went through the maneuver with him, over the telephone, and he successfully reduced it. You see it out here. Here it is with the splint on back in its natural position.

DR. DUNCAN EVE, JR. (Nashville): I certainly enjoyed the paper of Dr. Sheridan in regard to fractures of the small bones. I must say such fractures are among the most disabling injuries that we meet with and in general have received very little attention as they are regarded as trivial injuries. Therefore, it is my opinion that they have the highest rate of industrial disability.

The joints of the hand and fingers are extremely delicate in construction and are very susceptible to injury. Their movement is controlled by tendons within tendon sheaths on the palmar surface of the hand and by tendons which have no sheaths on the dorsal surface. For useful function it is necessary that changes in the joint capsules be prevented and that movement of the controlling tendons be preserved. If any portion of the tendon becomes slightly thickened or if a joint capsule becomes thickened and less elastic as a result of the formation of excessive tissue, a disabling hand will result regardless of its X-ray appearance. Large joints, such as the hip, knee, or ankle, do not have any complications after slight injury, or any thickening of the capsule. The most important single principle is the prevention of excessive tissue production.

In the treatment of a fracture of the shaft of any phalanx slight passive motion should be made every few days to prevent freezing of the tendons.

A fracture of the shaft of the first phalanx is not easily treated because of the opposing action of the interosseous and lumbrical muscles. It is best reduced by traction and then by flexion of the finger over a roll of bandage which brings the distal fragment into flexion. However, it remains in this position only ten to twelve days. Fractures of the shafts of the other phalanges do not offer the same problem. However, they should be immobilized in slightly flexed position.

Fractures involving joints or capsular attachments are treated with difficulty. If the finger moved too early an inflammatory reaction with increased formation and thickening of the capsule will result. On the other hand, if motion is unduly delayed, a stiffness will result. Therefore, immobilize these fractures from ten to twelve days and then begin slight passive motion every second day.

Comminuted or crush fractures at the end of the distal phalanx are best treated by immediate removal of the distal fragment, using a local anesthetic. Time and money can both be saved by this method and the patient will have a painless finger. This treatment is also advised for use in similar fractures of the big toe.

I think the large majority of these fractures of the phalanges and metacarpal bones should be put up in a flexed position. I think the amount of the flexion depends upon the location and character of the fractured bone. As a rule, the nearer the joint, the more the flexion is required. Sometimes a roll bandage in the palm or a ball of cotton serves the purpose best.

A metal splint that can be bent to the right position, and strong enough to hold these strong bones is the best dressing. Oftentimes they should extend beyond the end of the finger for protection. If extension is necessary, the splint can extend some distance beyond the end, and apply extension with rubber bands.

I do not like to fix these extension splints with plaster paris, but prefer fixing them with Z. O. plaster, or moleskin plaster. Such treatment will secure a good functional result in the large majority of cases.

DR. EARL CAMPBELL (Chattanooga): I want to congratulate Dr. Sheridan upon the splendid cases he has reported. I am sure all of us who do industrial work, or look after football players, have a good many of these cases. Each of us can look back on some unsatisfactory end results. If we will follow the technique shown this afternoon I am sure that our results will be better.

There are three of four things that I want to emphasize, and one or two points that I would like to bring out that are just a little bit different. In reference to treating the metacarpal bones, it is difficult, as we know, to maintain extension. In spite of the fact that it is somewhat dangerous to pad plaster on the skin, we can hold practically all of these cases in apposition by placing a small wad of plaster over the fracture site. Extension is kept up to keep the fracture from buckling. Pressure over the fracture site is maintained while the plaster is setting. At intervals during this time the fracture is observed with the fluoroscope. I have set a good many of these cases in this way. The pressure of the plaster pad over the fracture keeps the fragments in place after extension is stopped. Such a procedure is, of course, liable to produce trauma to the skin. This has occurred in only one of many cases, which was a fracture of the distal one-third of the fifth metacarpal bone, that was very hard to hold in place. It was only necessary to dress the wound a few times before it was entirely healed. In reference to the discussion as to whether or not antiseptics should be used in open wounds of the hand and wrist, I believe that the important thing is to carefully cleanse the part with green soap and water. It is very important to cleanse the entire hand, wrist, and forearm in order to be certain that the dirt does not get under the bandage and into the wound. The area surrounding the wound is novocainized and then the open wound is thoroughly cleansed. If one should want to use weak alcohol following this, I do not think that it will do any particular harm. The important point is to develop aseptic technique rather than the antiseptic that is used. I do not feel that the cleansing should be left to a nurse or even to an assistant. If this procedure is followed and a careful debridement is done, one should rarely get an infection, however dirty the part or wound may be.

In the last few years there has been a great deal of interest in carpal bone fractures. I feel that the most important point in handling these cases is to have at least four X-ray views. The X-rays should be reviewed by the interested surgeon since it is possible that a fine line fracture may be overlooked. One needs a magnifying glass to see some of these linear fractures. Last year I treated a Texas League baseball player who had received an injury to his wrist in midseason. X-rays were reported as negative. At the time of injury he was leading the league in hitting. The wrist was so disabling that he was dropped from the team. He came to me six months after the injury. Marked rarefaction had taken place at the site of the fracture of the navicular bone. Fragments were almost entirely separated. The wrist was immobilized with snug-fitting skin casts for a period of six months. Serial X-rays showed the formation of callus and when he was dismissed, the cavity had entirely filled in. He played baseball last summer without any discomfort.

In these cases, if a correct diagnosis is made and if the carpal bone is immobilized properly for a period of six to ten weeks, they will practically all heal properly without any disability. These cases should not be dismissed until the fracture has entirely healed. Patients with this type of injury should be permitted to return to active duty as soon as the swelling has gone. This active exercise is the best form of physiotherapy.

It is by free discussion of this kind and by the application of sound principles of traumatic surgery that good results will be obtained in injuries to the bones of the hands and wrists.

DR. H. EARLE CONWELL (Birmingham): In the last fourteen years we have had twelve cases of dislocations of the semilunar bone, all being reduced by the closed method. At first we used the broomstick method as described by Davis. Such method was used in the first two cases in which we had some median nerve involvement which was transitory, but I am sure it was caused by the pressure of the broomstick.

Following the above experience we then used the thumb pressure method which does very little harm and in most of our cases after we had done this two or three times we were able to reduce the semilunar by one manipulation.

The greatest importance in these cases is to get them early and reduce them early regardless of how much swelling is present.

Two years ago I had opportunity to go over all of our cases and not one has developed a necrosis.

This paper of Dr. Sheridan's is very important and most timely and as pointed out by Dr. Eve, if we will pay more attention to small bone fractures instead of too much attention to the long bones, better results will be obtained and greater improvement on the economic situation will be accomplished.

DR. WILLIAM J. SHERIDAN (closing): I certainly appreciate the very generous discussion, and all these men agree with me so well I would like to have any or all of them in consultation most of the time.

Dr. Brown in showing these cases of semilunar dislocation failed to mention what Dr. Conwell just mentioned, that if these cases are not reduced and reduced early, you may expect quite a bit of impairment due to the pressure on the median nerve.

I am sorry to say I cannot agree very well with Dr. Eve about the removal of these small fragments of bone at the tip of the finger. In my cases they rarely cause trouble. I do not feel that it is wise to make an open fracture out of one that is already closed unless there is more justification than that for doing so.

Dr. Miller did not quite agree with me on the use of antiseptics, but I have the feeling that the day of antiseptic surgery has more or less passed and that this might be called, perhaps, the day of aseptic surgery.

I do not see very many football players because in Chattanooga Earl Campbell gets most of them so he has more of this type of fractures of the wrist bones. In blocking a line play the player's hands are usually in extension, and as they push into the line they get a marked hyperextension of the wrist, which causes most of these fractures.

Dr. Campbell said something about fracture lines being missed in the X-ray by X-ray men. They will not only be missed by good X-ray men, but by X-ray men and surgeons as well. These fracture lines very frequently on first X-ray examination do not show, but two or three weeks later, during the normal process of healing of bone, when absorption occurs you will be able to find the fracture line. This is important because, if the wrist becomes troublesome, although you did not find anything at first, you had better go back and check later.

I want to thank Dr. Conwell for his demonstration of the reduction of the semilunar.

I did not go into the problem of dislocations. I kept most of my talk on fractures of the small bones and omitted dislocations purposely.

THE NONCONVULSIVE TOXEMIA OF PREGNANCY*

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THE VARIOUS forms of toxemia, including eclampsia, cause annually about thirty per cent of the approximate 15,000 maternal deaths in this country. There are many women who survive the convulsions and acute stages, or who survive the nonconvulsive forms of toxemia, and yet have permanent vascular or renal injuries impairing their health and shortening their lives. Exact terminology is not of great consequence. The term, "pre-eclamptic toxemia," is used synonymously with "nonconvulsive toxemia," because it conveys the idea that the toxemia may proceed from the nonconvulsive or pre-eclamptic stage into that of convulsions or eclampsia. There will be no discussion of the etiology of these forms of hypertensive toxemia, nor the pathological aspects of the disease. Rather this is concerned with practical measures which are of proved value in prophylaxis and treatment.

Toxemia of late pregnancy is a nonsurgical condition which should be treated by medical measures in the majority of cases. It has been demonstrated that in many localities the mortality following Cesarean section for eclampsia is as high as twenty per cent, while the mortality is reported to be as low as five per cent in cases treated primarily by medical measures. This means in many instances that medical treatment is carried out before measures are used to terminate pregnancy. Prevention rests on careful observation and management and the incidence of both the convulsive and nonconvulsive types is apparently lowered by means of systematic application of some of the simple principles of prenatal care.

Three instruments are to be had by any physician who accepts the care of pregnant women and these are an apparatus for determining blood pressure, a test tube used for the routine detection and rough estimate of the amount of albumin in the urine, and, most important, scales for weighing the patient.

This résumé has to do only with the nonconvulsive toxemia of pregnancy. Dieckmann has just finished a review of the 13,735 patients delivered in the Chicago Lying-in Hospital during the past five years, and for the following material I am indebted to him. There were fifty patients (.36 of one per cent) who had convulsions, but over 1,000 (7.2 per cent) who had toxemia with no convulsions. It is obvious that the number of patients who did not have eclampsia far outnumber those who did and the same situation is encountered in general practice.

One hears various statements concerning the value of prenatal care—that it is of no value, or that treatment at the time of delivery is the deciding factor. A recent résumé of the cases of eclampsia throughout the nation by Daily showed that the incidence in the last several years has dropped thirteen per cent, chiefly through the recognition and application of the principles of prenatal care. Proper obstetric care at the time of delivery will frequently save a patient's life and that of the baby, but permanent damage in many instances has already resulted which materially shortens the life expectancy of the mother.

Edema.—Periodic weights are of far more importance than watching for pitting edema of the ankles. Total weight gain is of less significance than the rapidity of gain. The normal average gain in weight should be twenty-one pounds, and a gain over this figure may indicate retention of water. A gain of more than one and one-half pounds per week is definite evidence of retention of water. This gain begins as an invisible retention of water and finally is demonstrable as pitting edema of the extremities.

Hypertension.—Rise in blood pressure at the time that a patient is first seen must be discounted. During the first trimester of pregnancy a decrease in blood pressure is the rule. But by full term, there has usually been a rise in the systolic blood pressure of fifteen to twenty millimeters. A systolic reading of 130 to 140 must be regarded with suspicion. In a patient with a tendency toward hypertension the pregnancy has often stimulated an increase of the blood pressure rather than being the actual cause of the hypertension.

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*Read before the Tennessee State Medical Association, Nashville, April 12, 13, 14, 1938.

Albuminuria. — When albumin can be demonstrated with the heat and acetic acid or sulpho-salicylic acid tests, it is abnormal in amount. In a case of persistent albuminuria, a thorough examination of the patient is indicated, but if the total amount of albumin in the twenty-four-hour specimen is less than three grams, one need have no fear as to the effect on the pregnancy. Certainly one should make sure that vaginal discharge is not the origin of albumin in the urine.

Symptoms.—The gravity of the condition should be apparent with the appearance of cerebral, visual, renal, and gastrointestinal symptoms in the patient who has gained excessively as these symptoms precede the appearance of convulsions.

Treatment.—Patients with mild toxemia should be seen every two weeks before the thirtieth week of pregnancy, and every week thereafter. At the stage of viability, twenty-eight weeks, fetal mortality is so high that we attempt to carry the patient to at least thirty-two or preferably thirty-four weeks in severe cases before terminating pregnancy. When symptoms are not sufficiently severe, the patient is advised to follow a diet of one egg daily, one quart milk, vegetables and fruits, and one serving of meat. Salty foods are forbidden and fluid intake restricted. The average excretion of salt on a general diet is ten or fifteen grams per day. The amount of salt eaten must be restricted until the excretion is less than three grams a day before symptoms will improve. If the patient continues to gain weight on the above management, one should exclude the use of fats, such as pie, cake, and fatty foods. If there is still no improvement, the diet must consist of vegetables, fruits, cereals, toast, coffee, and tea with, of course, the exclusion of salt. This is by no means a maintenance diet and can be used for only about three weeks. In the most severe cases the patient must stay in bed, and the diet consists of fruit and fruit juices, and can be continued for about ten days only. A patient should be sent to the hospital if any of the following symptoms appear:

1. Sudden increase in weight of three pounds or more per week.
2. Sudden rise of the systolic blood pressure of more than thirty millimeters.
3. A three-plus test for albumin in the twenty-four-hour specimen of urine.
4. Sudden appearance of edema in a patient who has been gaining rapidly.
5. The appearance of the well-known cerebral, visual or gastrointestinal disturbances.

Patients with primary hypertension rarely have convulsions, and in this group one fears fetal death, due to separation or infarction of the placenta. In some cases where the blood pressure does not increase these patients may be carried to term.

Criteria of the Severe Toxemias of Pregnancy.—

Group 1:

1. Edema of legs, hands, face or vulva.
2. Albuminuria of more than ten grams per day.
3. Blood pressure of 160 systolic or more.

Group 2:

4. Cerebral, visual, and gastrointestinal disturbances.
5. Hematuria.
6. Anuria.
7. Jaundice.
8. Tachycardia of 120 or more.
9. Cardial vascular embarrassment, *i. e.,* cyanosis, rales heard over the bases of the lungs.

Treatment of the Pregnancy. — Before twenty-four weeks: If more than one of the above signs and symptoms are present, and no improvement after seven days' management, the pregnancy should be terminated.

Twenty-five to thirty-one weeks: Do not

interfere before thirty-two weeks' gestation unless symptoms listed here as group 2 develop.

Thirty-two to thirty-six weeks: If two or more symptoms listed as group 1 increase in severity, the case should be terminated. Otherwise do not interfere unless the signs of group 2 appear.

Thirty-seven to forty weeks: Medical management until the cervix is soft and effaced, when an induction of labor may be successful. If group 2 symptoms appear the pregnancy should be terminated by: (1) Rupture of the membranes or insertion of a bag; or (2) Cesarean section if the cervix is firm and uneffaced and the environment suitable.

Specific medication, hormones, and dietary fads have all failed to improve the preeclamptic patient. Although it is clear that each patient must be regarded as an individual problem, we attempt to follow the foregoing rules in treating pregnant patients with toxemia.

PILONIDAL SINUS*

E. T. West, M.D., Johnson City

PILONIDAL SINUS, pilonidal cyst or coccygeal cyst was first described by Warren in 1867. Since that time many theories have been advanced as to its etiology; most all agree that it is of congenital origin. Some feel that it is primarily a malfusion of the neural canal, while others believe that it is an invagination of the ectoderm. Stone suggests that it may not be a defect at all, but an analogue of Preen gland seen in birds. Many observers feel that there is a distinctive type of individual in which pilonidal sinus is most prone to occur, characterized by obesity, hairiness and glandular dysfunction. Others believe that there is a familial tendency. The sinuses are more frequently found in males than females and Rogers of Boston reports two cases in the Negro race.

A postnatal dimple develops in the midline over the coccyx and lower sacrum. In about thirty per cent of newborn infants there is a sinus at this situation which is usually obliterated in growth. In the majority of cases in which a sinus or dimple persists no harm results, but in a few the dimple is exaggerated into a cyst lined with skin. The pent-up secretion of the cutaneous lining, bacteria, and hair set up an inflammatory process and abscess formation. This finds an exit through one or more of the congenital openings or more frequently breaks through the cyst wall and opens on the skin surface perhaps some distance from the mid-line. There is usually an immediate relief of the symptoms, but the same cycle of events is repeated unless surgical intervention is resorted to.

Incidence. — McKirdie, commenting on the frequency of this condition, cites the conclusion reached from studying the reports obtained from clinics and hospital groups, and in arriving at a percentage states that the so-called sacral dimple found in newborn and early childhood is only a potential cyst, that in reality only three or four per cent of patients examined with sacrococcygeal defects showed a pilonidal sinus. While the incidence generally speaking is low, the condition when present is very disabling and at times a painful one and requires radical treatment for its cure. The occurrence with regard to sex shows the male predominating in the ratio of four to one. Average age of patients seen is in the late twenties.

There is rarely any difficulty in the diagnosis of this condition. It is located superficially over the sacrococcygeal region. There is a small opening in the mid-line which if explored with a probe will be found to lead upward. In some cases one may be able to palpate a cordlike tract and occasionally hair can be seen protruding from the opening. About fifty per cent of cases show presence of hair. As a rule, nearly all of these sinuses become infected due to their close proximity to the anus and advice is not sought until infection has occurred. Most of our cases gave a history of trauma as initiating the symptoms. Further examination reveals a boggy, irregular, inflammatory tender mass with perhaps a purulent discharge over the coccyx or lower sacrum. In some cases the skin may be intact, but usually there are one or more fistulouslike openings lateral to the midline from which pus can be expressed. This asymetrical mass may be confused with furuncle or carbuncle and one whose orifice is close to the anus may be confused with perianal abscess or fistula-in-ano. A probe introduced into these openings leads downward toward the anal canal, while those in the sinus lead upward and there is no granulating tissue present in the sinus. The sinus does not come in contact with the bone.

Treatment.—To prevent recurrence of this condition complete removal of the lesion, including the skin, subcutaneous tissue, sinus, and sac en masse, is necessary. A great many methods have been devised for doing this. They all attempt to remove the entire sinus tract en masse and close the wound in such a way as to promote healing and prevent recurrence and complications. Some writers recommend that the sinus should be injected with an ethereal solution of methyline blue by means of a Luer syringe and a gooseneck cannula, the cannula secured to prevent back flow, and all stained tissue excised. But absence of the dye is not complete proof that all the diseased tissue has been removed. Others advise against methyline blue for this reason and recommend the use of paraffin immediately prior to operation. The injection of a radiopaque solution and X-ray pictures are an aid, but in the average case not necessary. Since infection is usually present and the circulation in this area impaired it is best to treat these cases with drainage and hot wet dressings for days or weeks to clear up some of the infection depending on its extent before radical excision is attempted. These are not emergency cases and the field of operation which at best is poor from the proximity to the anus should have careful preoperative care, some cases requiring weeks as above stated to get in good condition.

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*Read before the Tennessee State Medical Association, Nashville, April 12, 13, 14, 1938.

Spinal anesthesia is used, as it is believed local anesthesia increases the possibility of infection. The patient is placed with his face down on the table and traction made on either side of the buttocks by the assistant. An elliptical incision is made around the mass in the healthy skin, removing as little skin as possible and carried down in an oblique plane to the perisacral fascia and laterally to origin of Gluteus muscles if necessary, the base of the excised tissue being larger than the superficial portion. The entire mass is removed from above downward together with all of the infected tissue present. Hemostasis must be complete. The wound, we believe, should be closed if not grossly infected, preferably with heavy sutures well placed completely through the skin, subcutaneous tissue down to the fascia and out through the skin, thus relieving some of the tension and obliterating the dead space. The skin is further closed tight with fine dermal sutures, care being exercised to not invert the skin edges while closing. In some of our cases a rubber-wick drain was placed between the two mid-sutures. Do not place a drain near lower end; in cases which were badly infected the cavity was filled with a mild antiseptic solution before suturing. There must be perfect hemostasis in all the cases and we had no marked postoperative bleeding.

Closure.—Practically all our cases were closed by primary suture with or without small rubber drains and this was the procedure by choice where the involvement and infected area were not too great; four cases were closed in part and packed with gauze. Dr. Lahey's operation which in a way is a plastic procedure aims at closing the wound so that the scar will not be in mid-line and not be subject to the trauma that follows the usual procedure. We have had very little complaint from sensitive scars.

Immediate Postoperative Care.—The patient is at first placed in bed with the legs straight and slightly on his face. The sutures are removed on the third or fourth day and the dressing reapplied with large strips of adhesive placed over the dressing to hold the buttocks tightly together. Small doses of tr. camp. opii are given to prevent bowel movement for at least ninety-six hours postoperatively, and when enema is given let patient use commode instead of bedpan, thus eliminating the danger of contaminating the wound during defecation. Do not permit the patient to lie on his back, thus preventing further trauma.

Three of the cases which had extensive sinuses extending outward onto the buttocks necessitated removal of a great amount of tissue and creating a rather large dead space, with transverse incisions, buttock incisions healed primarily, but the wound over the sacrococcygeal area was packed and healed by granulations; this was necessarily slow, but gave no ill results except one which complained of painful scar. To these the air-cooled Alpine lamp was applied about thirty inches from the wound beginning with two minutes and the time increased or decreased as tolerated by patient. All others healed with no lipping of scar in an average of eight weeks.

Rogers and Dwight of Boston in March *Annals of Surgery* present a paper on treatment of pilonidal sinus based on 140 cases at Massachusetts General Hospital with excision by cautery in which they treated all but fourteen as ambulatory cases. This is a most interesting report and the treatment and postoperative care gone into in minute detail. I have not used the cautery in any of our cases, but I am convinced of its efficacy in cases which cannot be closed. The postoperative care of the wound in these cases is most important and a dead space in the process of healing is probably more at fault in production of a persistent sinus than the sinus being due to a small piece of diseased tissue left at the operation. All of our cases have been hospital or bed cases. However I see no reason why certain cases which are not extensive should not be ambulatory from the start.

This paper is based on a series of thirty cases. Twenty-eight were treated with excision primary suture with or without drain; two cases necessitated a second operation and were treated by excision and packing without suture. Practically all of these were admitted with a draining sinus as chief complaint, and sixty per cent gave a history of pain and drainage of from one to ten years' duration, usually beginning as a result of trauma. Half of the patients had had some operative intervention previously; this consisted of incision and drainage for the most part. Postoperatively eighteen healed by first intention; the remainer healed by granulation aided by Alpine ray. A follow-up of these patients reveals no recurrence of the symptoms and scar caused no trouble except two stated that the scar was painful after prolonged sitting, and stated that they had some irritation and itching of the scar during warm weather.

In Conclusion.—(1) An abscess, swelling or soreness over the sacrococcygeal region should always arouse suspicion of a pilonidal cyst. (2) Trauma is a factor in the production of the symptoms. (3) Preliminary care looking to a clean field for operation is stressed. (4) Complete removal is necessary to prevent recurrence, and most important all dead space must be obliterated in closing. (5) Spinal anesthesia is the anesthesia of choice. (6) Postoperative care is a very important factor. (7) Alpine light promotes healing.

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DISCUSSION

DR. DAUGH W. SMITH (Nashville): The essayist has given us an excellent presentation of a rather difficult problem.

The question of etiology remains a disputed one. Of the various explanations of the cause of pilonidal defect, ectodermal maldevelopment in embryonic life is probably most generally accepted.

An opportunity to study pilonidal cyst in its original form has indeed been rare. Pilonidal cyst per se has been, and still is, a surgical anomaly. Its existence may remain undiscovered until some circumstance arises within it which creates an additional pathologic state. Two conditions may be responsible for the pathological changes which cause the patient to seek relief. The first of these conditions is observed in the patient about the age of puberty, who has noticed a swelling with an associated pain or tenderness over the lower portion of the spine. If the sinus drains, the patient pays little or no attention to the condition. On the contrary, if the sinus fails to drain the pain and swelling are relieved by either incision and drainage or rupture of the cyst. The activities occur simultaneously with the activities of hair growth and sebaceous gland function. All of which are normal physiological changes, but in the pilonidal cyst they produce a pathological condition.

There is a second group of cases which we see in the thirties and forties that represent the second condition. It is thought the patient who represents this group has a cyst which is lined with a modified epithelial structure that has remained dormant for years, or the tension within the cyst has been relieved by the presence of a sinus. A history of trauma is frequently related by this group.

I think it can very aptly be said that no man can claim a large series of cases of pilonidal disease. About one of every 3,700 patients who register at the Mayo Clinic has pilonidal disease. It is found about four times as frequent in the male as the female. Quoting Dr. Lewis K. Ferguson, Philadelphia, Pennsylvania, "It seems to be entirely confined to the white race, at least no cases have been reported in Negroes." It has been my privilege to have operated on two Negro patients for pilonidal disease—one male and one female.

A pilonidal sinus or abscess occupies a position which suggests its nature. But one must consider the differential diagnosis of pilonidal cyst and fistula-in-ano. The finding of hair in the cavity of the wound is pathognomonic. If a sinus exists a probe when inserted will follow a course away from the anus. There are complicated anal fistulas which extend posteriorly before becoming a retrorectal abscess. A thorough examination of the anal canal will reveal whether the disease has its origin there. With the index finger through the anus, and the fingers of the other hand applied externally, one should be able to palpate a fistulous tract connecting the external opening with the anus.

The fact that one sees so much in literature about open and closed types of operations for pilonidal disease is evident that a large per cent of failure has been universally true. Drs. Lester Breidenbeck and H. L. Wilson, New York, in 1935, reported 132 cases who were treated by excision and packing with six per cent failures, also ninety-seven cases were treated by excision, suture and packing with thirty-seven per cent failures. Dr. Martin Kleckner sent questionnaires to members of the American Proctologic Society asking their experience in dealing with this problem. He collected 4,699 cases. Four thousand two hundred thirty-one cases were treated by excision and packing with 1.13 per cent recurrence. Three hundred sixty-five cases were treated by primary suture with 23.29 per cent recurrence. One hundred three cases were treated by primary suture with subsequent removal of sutures and allowed to heal by open granulation with 4.86 per cent recurrences. I particularly like the procedure employed by Dr. L. A. Buie of the Mayo Clinic, which is a combination of a suture and open procedure. In brief, it consists of partially splitting open the cyst, excising the lateral walls of the cyst and overhanging edges of subcutaneous tissue and skin. All subsidiary tracts are treated in like manner. The cut edge of the cyst and walls of the sinus are sutured to the free edge of the skin. This procedure exteriorizes the wound which reduces the likelihood of recurrence. And, too, reduces the period of convalescence.

DR. E. T. WEST (closing): In the matter of racial occurrence, Dr. Rogers of Boston reports two cases that I reported in my paper in the colored race. He comments on the rather marked percentage in the colored race inasmuch as his clinic dealt practically with white patients.

I think one very important feature in your results is the possibility of preliminary care in these cases to get them in fairly clean surgical condition so that you can hope for a clean result. I think that is one of the most important things we have to deal with.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee
Office of Publication, 508 Doctors Bldg., Nashville, Tenn.

Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 15, 1932.

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H. H. SHOULDERS, M.D., Editor and Secretary

JULY, 1938

EDITORIAL

PRINCIPLES THAT SHOULD GOVERN LOCAL MEDICAL SOCIETIES IN THE CONSIDERATION AND ADOPTION OF PLANS FOR THE DELIVERY OF MEDICAL CARE TO LOW INCOME GROUPS

In 1934 there was considerable agitation in the medical profession on the question of medical care to low income groups. Many plans were adopted by local societies and put into operation. Others were being contemplated. Various contracts have been drawn up for the delivery of hospital care under partial payment plans, etc.

At that time it did not seem appropriate for the House of Delegates of the American Medical Association to take action which would approve or condemn these various plans and proposals. It did seem appropriate, however, to adopt a statement of principles to which they should conform. These principles were in line with the principles in the code of ethics and with principles generally accepted as essential to good medical care.

As experience has accumulated from the operation of these local plans nothing has happened to cause the House of Delegates to alter any of the principles then adopted. To the contrary, they were again endorsed.

They are reproduced here as a matter of information to the membership.

First: All features of medical service in any method of medical practice should be under the control of the medical profession. No other body or individual is legally or educationally equipped to exercise such control.

Second: No third party must be permitted to come between the patient and his physician in any medical relation. All responsibility for the character of medical service must be borne by the profession.

Third: Patients must have absolute freedom to choose a legally qualified doctor of medicine who will serve them from among all those qualified to practice and who are willing to give service.

Fourth: The method of giving the service must retain a permanent, confidential relation between the patient and a "family physician." This relation must be the fundamental and dominating feature of any system.

Fifth: All medical phases of all institutions involved in the medical service should be under professional control, *it being understood that hospital service and medical service should be considered separately. These institutions are but expansions of the equipment of the physician.* He is the only one whom the laws of all nations recognize as competent to use them in the delivery of service. The medical profession alone can determine the adequacy and character of such institutions. Their value depends on their operation according to medical standards.

Sixth: However the cost of medical service may be distributed, the immediate cost should be borne by the patient if able to pay at the time the service is rendered.

Seventh: Medical service must have no connection with any cash benefits.

Eighth: Any form of medical service should include within its scope all legally qualified doctors of medicine of the locality covered by its operation who wish to give service under the conditions established.

Ninth: Systems for the relief of low income classes should be limited strictly to those below the "comfort level" standard of incomes.

Tenth: There should be no restrictions on treatment or prescribing not formulated and enforced by the organized medical profession.

In principle number five there are specific statements concerning the relationship that should exist between doctors and hospitals.

Some hospital superintendents and governing boards have felt inclined at times to sell a contract for care and include in their contract medical care as well as hospital care. This is in conflict with the principles of the code of ethics. It is in conflict with the laws of the land as determined by courts of last resort.

Not long ago a young doctor requested an opinion of the writer on the question as to whether a doctor could hire his services to an organization or corporation which was selling to its clients a contract providing for hospital and medical care. The only possible answer to such a question is that if a doctor sells his services to an agency which is engaged in an unethical practice, in fact, an illegal practice, he too is participating in the unethical practice, even though he has nothing to do with drawing up the contract or selling it. Ours is a profession. If we expect it to remain a profession it is necessary for us to observe the principles which must govern a profession.

THE SURVEY OF MEDICAL CARE BY THE PROFESSION OF MEDICINE

Many surveys of medical care have been made at various times by various groups of people representing various interests in the subject.

Most of the so-called surveys have embraced small groups representing the various elements in the population of the United States.

The findings of these surveys, in many instances, are entirely out of line with the findings of limited surveys made by the medical profession.

After much deliberation on the subject the Board of Trustees of the American Medical Association adopted plans for a nation-wide survey of medical care to be conducted by and under the direction of local medical societies throughout the United States.

All the local societies in Tennessee have received the forms to be used in making this study.

It will be remembered that Dr. R. G. Leland was requested to meet with the officers of county societies during the meeting of the State Society in April for the purpose of informing them on the subject.

An advisory committee was appointed by the Board of Trustees of the American Medical Association, headed by Dr. W. F. Braasch, of Rochester, Minnesota, as chairman. That committee sent a communication to the House of Delegates at the San Francisco session. It was endorsed heartily by the House. It is reproduced here for the purpose of informing and stimulating the local medical organizations in the state to push forward the study in a wholehearted manner. It is as follows:

"Widely publicized statements have been made by so-called leaders of medical science, social reformers, and welfare politicians to the effect that the need for medical reform was urgent and that immediate radical changes were essential in order to give adequate medical care to countless hundreds who were now being neglected. Estimates of widespread inadequacy of medical care, rated as high as fifty per cent in the indigent groups, made some of us gasp. These claims have gone practically unchallenged except by the organized profession and are still being widely quoted and accepted by press and public. Information concerning the distribution of medical service which has been quietly accumulated in recent years at the headquarters of the American Medical Association was quite contrary to statements emanating from sociologic and welfare groups and from surveys inspired by governmental agencies. The desirability of more accurate data became very evident and, when voiced by the American Public Health Association, the trustees and officers of the American Medical Association lost no time in starting a nation-wide survey of the actual supply of medical care. In contrast to previous health surveys made by laymen untrained and ignorant of the intricacies involved, this survey was to be made by the doctor himself.

"After thorough preliminary study by

the Bureau of Medical Economics and the officers of the Association, it was decided to use the county medical society as the basic unit of the survey. It was not a case of 'passing the buck' as was claimed, but it is the only way in which the medical conditions existing in different sections of the country could be determined. It was also decided to include every phase of activity related to medical service, so as to make the survey as complete as possible. For this purpose forms were compiled which, when filled out, should give an exhaustive survey of the entire medical field. Authoritative data concerning the need and supply of medical care will at last be available and we shall now be able to discuss intelligently any inadequacy which may exist.

"It is evident that this survey will furnish us not only a great variety of valuable data related to medical care, but many by-products of importance as well. We should be able to determine, for example, the following data concerning any deficiency in supply of medical service; its geographic distribution; the type of community, and the social status of the patient involved. We should also discover why these conditions exist, whether public officials or institutions are derelict, and in what respect. It would be most disappointing if from the great mass of data accumulated no suggestions developed to improve the present distribution of medical service. Not the least important will be the effect of the survey on public opinion and incidentally the sympathetic reaction on the part of laymen who have participated in the accumulation of data. Finally, and possibly of greatest importance, this survey should draw the component parts of our Association into closer relationship with activities centered in the Association headquarters.

"Every effort has been made by the officers of your Association to publicize and arouse interest in the survey by means of articles in the Organization Section of *The Journal*, printed information sent to state organizations for distribution, and by individual efforts of the officers and members of the Board of Trustees. Dr. R. G. Leland, Director of the Bureau of Medical Economics, has responded to the requests of numerous state and county societies and in recent months has devoted much time and energy to giving personal aid to its expedition.

"An advisory committee was appointed by the Board of Trustees, composed of men from various parts of the country who have been interested in economic affairs. At our initial meeting many of the problems involved were discussed. The members of the committee were unanimous in recognizing the importance of the survey and urged that it be carried out as thoroughly as possible. As might be expected, opinions as to the method of conducting the survey in the various parts of the country were quite different. It was felt that instructions in conducting the survey and in filling out the different forms should not be too didactic. It seemed desirable to let the various sections of the country devise their own methods of procedure. Each member of the Advisory Committee agreed to take an active part in the survey of his own state and also, so far as possible, to lend his efforts in an advisory capacity to the activities in the adjacent states. It was felt that this great attempt to make an inventory of national medical supply should by no means be final and that in some of its phases these efforts should be continuous.

"What progress has been made so far? Although the survey has been carried on with enthusiasm in some states, we regret to say that the response in some parts of the country has been lukewarm and in several states very disappointing. There are scattered reports of open hostility and back-sniping on the part of individual members, insinuations that the survey will be worthless and will lay us open to criticism. The latter can happen only if we do not take the survey seriously and cooperate in every way possible.

"It has been observed that those states were most successful which had first established a good, working, preliminary organization. The exact form of organization varied in the different states. In most cases the activities were centralized in the office of the secretary of the state association. In several states general supervision was left to the committee on medical economics, and detailed supervision in the various counties or districts of the state was subdivided among the members of the council or the board of trustees representing these districts. In most counties the details of the survey were in charge of a special committee appointed for this purpose. Contact was made with the county secretaries either by means of bulletins, notices in state medical journals, or personal visits from members of the economics committee, the council or the state secretary. The survey went over best in counties in which a preliminary informatory gathering had preceded distribution of the blanks. Meetings were held in the larger communities of the county, in which a representative group was given personal instruction by officials of the state organization or by the county secretary. In some states state-wide and district meetings of county representatives were held and at the gatherings state and national officers, including Dr. Leland himself, gave individual advice. Field work to facilitate the survey throughout the state was carried on by the secretary or other officer of the state association in some areas. In others it was done in conjunction with the chairmen and members of the economics committee or of the council. In one state a group of senior medical students was employed to facilitate the survey.

"In order to demonstrate the different methods of organization and the means employed in various states, we suggested that the Bureau of Medical Economics prepare an exhibit in the American Medical Association section of exhibits. We trust that many officers of county and state societies, as well as members of the Association, will avail themselves of the opportunity to profit from experience already had. In addition, the members of the Advisory Committee will be available during the meeting in order to discuss problems in the conduct of the survey which may have appeared in any state or county organization.

"The cost of conducting the survey varies widely in different localities. It has been found necessary to devote comparatively little money to it in most of the state associations, averaging only a few hundred dollars. The cost of the survey in the larger communities has been borne by the local county societies, with the assistance of the state medical societies in some instances, and has caused no excessive burden. The expense involved in accumulating and evaluating the various data assembled in the Association headquarters will not be excessive and has already been taken care of by the Board of Trustees. The total expenditure entailed should not be a serious problem and promises to be insignificant in comparison with the value received.

"With regard to the various forms, as might be expected, form 1, which deals directly with the physician himself, is criticized most. Confusion arose in the minds of some as to how to answer questions 1, 2, and 3 of this form. Since many physicians did not keep a close record of indigent patients, it was difficult to give an exact answer to these questions. However, it was held by Dr. Leland and others that an approximate estimate of the number of patients treated would suffice. In some places physicians are keeping records for a month or more to get dependable estimates.

"It is generally recognized that no large survey can be 100 per cent accurate. Even life insurance companies are unable to make an exact survey. The most we can expect to get will be a pattern or sampling of the medical situation in each county and state. Although it is important that the sampling should be as accurate as possible it is of equal importance that every physician should do the best he can in filling out the blanks.

"In order to increase the accuracy of data from several questions in form 1, it was thought advisable to make a separate spot survey over short periods of time. Accordingly, the Bureau of Economics is sending out record forms to cover these different periods, in July, October, and January. These blanks, form 1F, will permit the keeping of an accurate record of patients during those periods.

"The importance of answering questions

7 and 9 in form 1 cannot be overemphasized. In fact, the actual value of form 1 would be comparatively little unless these questions were fully considered. We are particularly interested in knowing what the physician's reaction is toward the problems of medical care and what remedies he can suggest for their improvement under the present circumstances.

"In large and highly industrialized communities, considerable difficulty arose in filling out form 8. In order to facilitate and simplify the gathering of information, special blanks were prepared by the survey committee in Pennsylvania and in other states. The Bureau of Medical Economics has repeatedly advised the use of additional questions or forms when necessary to acquire a complete understanding of the problem of medical demand and supply. We understand that the blanks sent out to the various institutions and social agencies have been filled out much more promptly and completely than those sent to the physicians themselves. It would be most unfortunate for the success of the survey if this discrepancy should continue.

"It cannot be made too emphatic that this is primarily a survey of the practitioners of this country. We are interested in finding out the direct results of their observations and their conclusions as to the supply of medical service. We are not interested so much in the theoretic reforms of many of the so-called leaders of medicine, which in most cases are products of the noble thought and the library table. It is not of great importance to find out what those who are engaged in teaching or cloistered specialists and institutional doctors think about medical care, and we already know what governmental officials and social workers think. The facts of the situation must come from those who are in direct contact with the actual practice of medicine. We must find out from them to what extent reform in medical care is needed and get their opinions as to how it can best be accomplished.

"If there ever can be a mandate from the American Medical Association to its members, this survey should be so considered. Now that we are definitely committed to the survey, it is up to us to make good; if we do not, the situation will be most disastrous.

"The best advice the advisory committee can give is that each member of the House of Delegates shall individually take on himself the responsibility of the success of the survey in the district that he represents. If you find that the survey is lagging in your district, get after the officers of the backward state or county society and convince them of the great importance of its completion. See to it that effective organization is established at once. Ask the member of the advisory committee or the Board of Trustees in your part of the country, ask Dr. Leland and the officers of the American Medical Association, for their active cooperation, and it will be forthcoming. How many of the members of this House have filled out form 1? If you have not, you should do so immediately. Every one of you should see to it that your county society sends in a return as complete and as quickly as possible.

"Gentlemen, this is your survey, not that of any bureau, committee or officer of the Association. It is squarely up to you and your constituents to carry it through successfully. It is no exaggeration to state that this survey may have a profound influence on the future course of American medicine."

DEATHS

Dr. W. F. Smith

Dr. W. F. Smith, Decherd, Vanderbilt School of Medicine, 1898; aged seventy; died June 21.

Thomas F. Moore

Mr. Thomas F. Moore, representative of the Mead Johnson Company, was in an automobile accident near Carthage, after leaving the Tennessee Valley Postgraduate Medical Assembly, Knoxville, on June 24. He died in Nashville at the St. Thomas Hospital on June 25.

Mr. Moore was in charge of the Mead

Johnson booth at conventions and called regularly on the profession. He was always welcome to doctors' offices because of his pleasant manner and charming personality. He was a friend of the doctor and will be missed by the profession.

We extend our sympathy to his family and to the firm which he so ably represented.

RESOLUTIONS

IN MEMORIAM

Dr. Joseph Fletcher Campbell

The medical profession of Hamblen County Medical Society deeply deplore the loss of Dr. Joseph Fletcher Campbell of Morristown, Tennessee, which occurred on April 1, 1938.

Dr. Campbell graduated from the University of Virginia and from there went to Baltimore, Maryland, where he received his medical education at the P. and S. Hospital.

He first practiced in Knoxville, Tennessee, but removed early in life to Morristown, where he enjoyed a large practice. He always displayed deep interest in the proceedings of the medical society and was always found willing to help in any way he could.

Whereas this society has lost one of its favorite members whose passing is deemed a great loss.

Resolved, That in the death of Dr. Campbell this society has lost a member that upheld the best traditions of medical ethics, and that these resolutions be entered upon the minutes of the Hamblen County Medical Society, and a copy sent to his sons with the deepest sympathy from this society. Also a copy sent to the Journal of the Tennessee Medical Society.

R. A. Purvis, M.D., *Pres.*
D. J. Zimmerman, M.D., *Vice-Pres.*
D. R. Roach, M.D., *Secy.*

Dr. J. L. Hoover

Whereas the members of the Rutherford County and Stones River Academy of Medicine are cognizant that Dr. J. L. Hoover was a veteran in the practice of medicine in the rural areas of Rutherford and adjoining counties for many years and always performed the duties of his profession in an efficient, patient, and sympathetic manner, and that he was known in his community as a highly respected citizen and gentleman; and

Whereas they also recognize in his passing the loss to the profession and to his clientele a competent confrere and beloved friend.

Therefore Be It Resolved, That they hereby express their sorrow and profound regret in the passing of this splendid physician.

And Be It Resolved Further, That this resolution be spread on the minutes of the Rutherford County and Stones River Academy of Medicine as of June 8, 1938.

And Be It Resolved Further, That copies of this resolution be sent to the bereaved family and the Journal of the Tennessee State Medical Association.

Respectfully submitted,
W. T. Robison, M.D., *Chairman.*
A. J. Jamison, M.D.
J. B. Black, M.D.

Dr. Joseph David Hall

Whereas the members of the Rutherford County and Stones River Academy of Medicine are cognizant that Dr. Joseph David Hall practiced medicine in the rural areas of Rutherford and adjoining counties for about fifty-four years and always rendered efficient, patient, and untiring service to those who came under his care as a physician, and that at the same time he fulfilled all the duties and requirements of an honorable citizen and Christian gentleman; and

Whereas they also recognize in his passing the loss of a highly respected member and beloved past president who lived and practiced his profession among them in such a way as to command the respect and admiration of all with whom he came in contact.

Therefore Be It Resolved, That they hereby express their profound regret in the passing of this splendid physician.

And Be It Further Resolved, That this

resolution be spread on the minutes of the Rutherford County and Stones River Academy of Medicine as of June 8, 1938.

And Be It Further Resolved, That copies of this resolution be sent to the bereaved family and the JOURNAL OF THE TENNESSEE STATE MEDICAL ASSOCIATION.

Respectfully submitted,
W. T. ROBISON, M.D., *Chairman.*
A. J. JAMISON, M.D.
J. B. BLACK, M.D.

NEWS NOTES AND COMMENTS

The twenty-third annual session of the American College of Physicians will be held in New Orleans with general headquarters at the Municipal Auditorium, March 27-31, 1939.

COMMUNICATIONS

To Whom It May Concern:

Be it known by these presents that the Tennessee Chiropractic Research Society, at their regular legal meeting held in Memphis, June 8, 1938, did pass the following resolution and that the same became a matter of record on the minutes of the secretary.

Resolution

Whereas the science of chiropractic is legally recognized in the majority of the states and territories of the United States; and

Whereas said states and territories have legally defined chiropractic; and

Whereas said definition as complied with by many and various practitioners in the various states and territories have elastically expanded to incorporate many modalities, electrically and otherwise, and since this definition has become confusing to the public to such an extent in some of the states as to require supreme court action in the rendering of opinions and judicial decisions in defining chiropractic, and since the courts of our own State of Tennessee have never rendered such a decision, and

Whereas there is a popular demand for a stabilized correct interpretation of the definition of the word chiropractic in the State of Tennessee.

Be It Therefore Resolved, That this society stand directly and firmly on the intended meaning of the definition contained in the context of the act that gives us the right to practice, namely, that chiropractic is the science of the cause of disease and the art of adjusting, by hand only, the articulations of the human spine.

Be It Further Resolved, That this definition is inclusive and does not in any manner include medicine, surgery, osteopathy, electrotherapy, hydrotherapy, or any other modality of the physiotherapist.

Be It Further Resolved, That the definition of chiropractic does not include any manipulation or adjustment of the articulations of the human foot.

Be It Further Resolved, That this society does not condemn or in any manner cast reflection on any proved modality of merit of any profession.

(Signed) J. E. RAFFERTY, D.C.,
Secretary, T. C. R. S.

MEDICAL SOCIETIES

Five-County Medical Society:

On June 28 the society was host at Shiloh National Park for a meeting to which other Tennessee counties and adjoining Mississippi counties were invited. Physicians from Alcorn and Tishomingo Counties, Mississippi, and Madison, McNairy, Hardin, Henderson, Chester, Lewis, Decatur, Lawrence, Perry, and Wayne Counties, Tennessee, joined in a day devoted to social and professional activities.

A large number was present and an excellent scientific program was given.

The scientific meeting was held at the pavilion and a picnic dinner at Rhea Spring.

Following an invocation by Rev. Robert F. Wylie, Michie, Tennessee, and address of welcome by Superintendent W. W. Luckett, Shiloh National Park, four papers were read.

(Continued on page two eighty-eight)

LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

President—Dr. Tom R. Barry, Knoxville.
Vice-President for West Tennessee—Dr. John Jackson, Dyer.
Vice-President for Middle Tennessee—Dr. W. S. Rude, Ridgetop.
Vice-President for East Tennessee—Dr. W. A. Garrott, Cleveland.
Secretary-Editor—Dr. H. H. Shoulders.
Assistant Secretary-Editor—Dr. W. M. Hardy.

TRUSTEES

Chairman and Treasurer—Dr. C. M. Hamilton, Doctors Building, Nashville.
Dr. A. F. Cooper, Goodwyn Institute Building, Memphis.
Dr. E. R. Zemp, Walnut Street, Knoxville.
Dr. Franklin B. Bogart, Medical Arts Building, Chattanooga.
Dr. George C. Williamson, Columbia.

COUNCILORS

First District—Dr. L. E. Dyer, Greeneville.
Second District—Dr. S. R. Miller, Knoxville.
Third District—Dr. Hiram A. Laws, Jr., Chattanooga.
Fourth District—Dr. J. T. Moore, Algood.
Fifth District—Dr. John W. Sutton, Petersburg.
Sixth District—Dr. H. S. Shoulders, Nashville.
Seventh District—Dr. C. D. Walton, Mt. Pleasant.
Eighth District—Dr. J. R. Thompson, Jackson.
Ninth District—Dr. E. H. Baird, Dyersburg.
Tenth District—Dr. W. B. Burns, Memphis.
Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

Delegates to the American Medical Association—
Dr. E. G. Wood, Knoxville; East Tennessee.
Dr. H. H. Shoulders, Nashville; Middle Tennessee.
Dr. H. B. Everett, Memphis; West Tennessee.

Alternates—
Dr. E. T. Newell, Chattanooga; East Tennessee.
Dr. J. O. Manier, Nashville; Middle Tennessee.
Dr. E. C. Ellett, Memphis; West Tennessee.

OFFICERS OF COUNTY MEDICAL SOCIETIES

County	President	Vice President	Secretary
Anderson	O. E. Ballou, Clinton	Geo. W. Kelly, Clinton	J. S. Hall, Clinton
Bedford	James N. Burch, Shelbyville	Price Womack, Shelbyville	W. H. Avery, Shelbyville
Blount	G. D. LeQuire, Maryville	W. C. Crowder, Maryville	J. Frank Manning, Maryville
Bradley	D. N. Arnold, Cleveland	C. H. Taylor, Cleveland	Madison S. Trewhitt, Cleveland
Campbell	J. L. Heffernan, Jellico	G. M. Rogers, LaFollette	R. J. Buckman, LaFollette
Carroll	O. W. Fesmire, Trezevant		J. H. Williams, McKenzie
Carter	A. R. Collins, Watauga Valley	H. P. Damron, Elizabethton	E. T. Pearson, Elizabethton
Chester, Henderson, Decatur	R. M. Conger, Decaturville		L. C. Smith, Henderson
Cocke	J. A. P. Shields, Hartford	W. C. Ruble, Drew A. Mims, Newport	W. E. McGaha, Newport
Cumberland	E. W. Mitchell Crossville		V. L. Lewis, Crossville
Davidson	W. B. Anderson, Nashville	M .S. Lewis Nashville	J. P. Gilbert, Nashville
Dickson	Hartwell Weaver, Dickson		R. P. Beasley, Dickson
Dyer, Lake, Crockett	J. O. McKinney, Friendship	J. E. Frazier, Newburn (Dyer) J. P. Moon, Tiptonville (Lake) W. H. Stallings, Friendship (Crockett)	C. L. Denton, Dyersburg
Fayette, Hardeman	F. K. West, Rossville		Wiley D. Lewis, Bolivar
Fentress	A. H. Crouch, Forbus		C. A. Collins, Wilder
Franklin	Geo. E. Bogart, Sherwood	Henry T. Kirby-Smith, Winchester	John M. Hardy, Sewanee
Gibson	John Jackson, Dyer	Robert Morris, Medina	E. P. Bowerman, Trenton
Giles	A. W. Deane, Pulaski	G. C. Grimes, Aspen Hill	J. U. Speer, Pulaski
Greene	Hal Henard, Greeneville	R. S. Cowles, Greeneville	I. E. Phillips, Greeneville
Grundy	O. H. Clements, Palmer	Wm. A. Brewer, Monteagle U. B. Bowden, Pelham	T. F. Taylor, Monteagle
Hamblen	R. A. Purvis, Morristown	D. J. Zimmerman, Morristown	D. R. Roach, Morristown
Hamilton	A. M. Patterson, Chattanooga	S. H. Long, Chattanooga	J. Marsh Frere, Chattanooga
Hardin, Lawrence, Lewis, Perry, Wayne	J. T. Keeton, Clifton	Henry N. Moore, Savannah (Hardin) Leo Harris, Lawrenceburg (Lawrence) Paul Wiley, Hohenwald (Lewis) W. E. Turner, Lobelville (Perry) D. L. Woods, Waynesboro (Wayne)	O. H. Williams, Savannah
Haywood	R. T. Keeton, Brownsville	G. G. Mulherin, Brownsville	Roy M. Lanier, Brownsville
Henry	A. F. Paschall, Puryear	Elroy Scruggs, Paris	R. Graham Fish, Paris
Hickman	Margaretta Bowers, Wrigley	E. C. Mulliniks, Centerville	W. K. Edwards, Centerville
Jackson			E. W. Draper, Gainesboro
Knox	Robt. F. Patterson, Knoxville	R. G. Waterhouse, Knoxville	Jesse C. Hill, Knoxville
Lauderdale	Joe B. Lackey, Ripley		Jas. L. Dunavant, Ripley
Lincoln	R. T. Odom, Fayetteville	W. S. Joplin, Petersburg	R. E. McCown, Fayetteville
Loudon	J. A. Leeper, Lenoir City	J. T. Mourfield, Lenoir City	J. R. Watkins, Loudon
Macon	D. D. Houser, Lafayette		J. Y. Freeman, Lafayette
Madison	Glenn D. Batten, Jackson	William K. Sullivan, Jackson	S. M. Herron, Jackson
Maury	Leon Ward, Mt. Pleasant	H. O. Anderson, Mt. Pleasant	D. B. Andrews, Columbia
McMinn	Boyd McClary, Etowah	C. O. Foree, Athens	D. F. Seay, Englewood
McNairy	E. M. Smith, Selmer	J. R. Smith, Selmer	T. N. Humphrey, Selmer
Monroe	R. C. Kimbrough, Madisonville		David M. Cowgill, Madisonville
Montgomery	M. L. Shelby, Clarksville	Philip L. Lyle, Clarksville	V. H. Griffin, Clarksville
Obion	F. B. Kimzey, Union City		D. S. Latimer, Union City
Overton	W. M. Breeding, Livingston		A. B. Qualls, Livingston
Polk	Thos. J. Hicks, Copperhill	W. Y. Gilliam, Copperhill	F. O. Geisler, Isabella
Putnam	R. L. Witherington, Cookeville	T. M. Crain, Monterey	Thurman Shipley, Cookeville
Roane	O. H. Coleman, Kingston	F. A. Neergaard, Harriman	J. C. Fly, Kingston
Robertson	W. P. Stone, Springfield	J. W. Wilkison, Springfield	W. F. Fyke, Springfield
Rutherford	John F. Cason, Murfreesboro	R. C. Van Hook, Auburntown	J. A. Scott, Murfreesboro
Scott	D. T. Chambers, Norma	T. L. Phillips, Oneida	Milford Thompson, Oneida
Sevier	R. F. Thomas, Sevierville	R. J. Ingle, Sevierville	H. A. Sauberli, Sevierville
Shelby	J. J. Hobson, President, Memphis J. H. Francis, Pres.-Elect, Memphis	W. C. Colbert, Memphis	A. F. Cooper, Secretary, Memphis E. G. Kelly, Treasurer, Memphis
Smith	A. O. Parker, Brush Creek	W. F. Boze, Carthage	Thayer S. Wilson, Gordonsville
Sullivan, Johnson	L. C. Cox, Kingsport	T. R. Bowers, Bristol (Sullivan) E. Bruce Rhea, Shouns (Johnson)	C. F. N. Schram, Kingsport
Sumner	C. D. Robbins, Gallatin	C. H. Donoho, Portland	W. M. Dedman, Gallatin
Tipton	A. J. Roby, Covington	J. J. Fleming, Atoka	H. C. Currie, Covington
Unicoi	H. L. Monroe, Erwin	R. H. Harvey, Erwin	J. J. Wright, Erwin
*Warren	John S. Harris, McMinnville	E. L. Mooneyham, Rock Island	John T. Mason, McMinnville
Washington	H. B. Cupp, Mountain Home	Walter Hankins, Johnson City	Carroll H. Long, Johnson City
Weakley	J. A. Moore, Sharon	M. D. Ingram, Dresden	T. B. Wingo, Martin
White	E. T. Tubb, Sparta		A. F. Richards, Sparta
Williamson	W. F. Roth, Jr., Franklin	B. T. Nolen, Franklin	K. S. Howlett, Franklin
Wilson	J. S. Campbell, Lebanon	R. N. Buchanan, Jr., Lebanon	R. B. Gaston, Lebanon

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* 1937 Officers.

COMMITTEES*

The following is a list of the standing committees of the Tennessee State Medical Association provided for in the constitution and by-laws and appointed by the proper authority, together with some special committees appointed under the authority of a resolution by the House of Delegates.

Some of the committees are appointed for a definite period. In such instances the appointment of the committeeman expires with the meeting of the House of Delegates in the year stated opposite his name.

COMMITTEE ON SCIENTIFIC WORK

Dr. H. H. Shoulders, Chairman, Nashville.
Dr. A. F. Cooper, Memphis.
Dr. Frank Harris, Chattanooga.
Dr. A. H. Lancaster, Knoxville.

STATE TUBERCULOSIS COMMITTEE

Dr. W. S. Rude, Chairman, Ridgetop.
Dr. O. N. Bryan, Nashville.
Dr. C. M. Oberschmidt, Memphis.
Dr. J. L. Hamilton, Chattanooga.

HOSPITAL COMMITTEE

Dr. D. R. Pickens, Chairman, Nashville.
Dr. E. H. Baird, Dyersburg.
Dr. E. A. Gilbert, Chattanooga.
Dr. E. G. Wood, Knoxville.
Dr. H. B. Everett, Memphis.
Dr. Lee K. Gibson, Johnson City.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION

Dr. L. W. Edwards, Chairman, Nashville (1939).
Dr. E. W. Cocke, Memphis (1941).
Dr. Battle Malone, Memphis (1940).
Dr. Tom Barry, Knoxville (1938).
Dr. T. R. Ray, Shelbyville (1942).

LIAISON COMMITTEE

Dr. W. C. Dixon, Chairman, Nashville (1941).
Dr. W. P. Wood, Knoxville (1940).
Dr. Hiram A. Laws, Chattanooga (1939).
Dr. Tom Mitchell, Memphis (1938).
Dr. Tom R. Barry, Knoxville (1942).

COMMITTEE ON INSURANCE

Dr. A. F. Cooper, Chairman, Memphis.
Dr. C. M. Hamilton, Nashville.
Dr. S. R. Miller, Knoxville.

COMMITTEE ON MEDICAL DEFENSE

Dr. S. R. Miller, Chairman, Knoxville.
Dr. H. B. Everett, Memphis.
Dr. H. M. Tigert, Nashville.

ADVISORY COMMITTEE TO THE WOMAN'S AUXILIARY

Dr. B. F. Byrd, Chairman, Nashville.
Dr. Oliver Hill, Knoxville.
Dr. Percy Wood, Memphis.

COMMITTEE ON EDUCATION

Dr. J. Marsh Frere, Chairman, Chattanooga (1940).
Dr. R. B. Wood, Knoxville (1938).
Dr. D. W. Smith, Nashville (1940).
Dr. H. B. Gotten, Memphis (1938).
Dr. W. O. Baird, Henderson (1939).
Dr. J. M. Lee, Nashville (1939).

COMMITTEE ON MEMOIRS

Not filled.
Dr. H. Quigg Fletcher, Chattanooga.
Dr. E. L. Ellis, Maryville.
Dr. L. J. Lindsey, Covington.
Dr. B. T. Nolen, Franklin.

COMMITTEE ON MATERNAL WELFARE

Dr. J. R. Reinberger, Chairman, Memphis.
Dr. M. S. Lewis, Nashville.
Dr. H. P. Hewitt, Chattanooga.
Dr. Andrew Smith, Knoxville.
Dr. C. W. Friberg, Johnson City.
Dr. L. C. Harris, Lawrenceburg.
Dr. D. T. Holland, Newbern.
Dr. J. E. Powers, Jackson.

COMMITTEE ON CHILD WELFARE

Dr. W. D. Anderson, Chairman, Chattanooga.
Dr. Oliver Hill, Knoxville.
Dr. Frazier Binns, Nashville.
Dr. W. D. Mims, Memphis.

CANCER COMMITTEE

Dr. Ralph Monger, Chairman, Knoxville.
Dr. S. J. Sullivan, Cleveland.
Dr. Howard King, Nashville.
Dr. H. S. Shoulders, Nashville.
Dr. J. W. McClaran, Jackson.
Dr. Frank Smythe, Memphis.

COMMITTEE ON PHYSICAL THERAPY

Dr. R. W. Billington, Chairman, Nashville.
Dr. A. M. Patterson, Chattanooga.
Dr. Robert Patterson, Knoxville.
Dr. A. H. Meyer, Memphis.
Dr. J. F. Hamilton, Memphis.

COMMITTEE ON POSTGRADUATE INSTRUCTION IN OBSTETRICS

Dr. Jas. R. Reinberger, Chairman, Memphis.
Dr. Franklin B. Bogart, Chattanooga.
Dr. O. W. Hyman, Memphis.
Dr. John M. Lee, Nashville.
Dr. J. O. Manier, Nashville.
Dr. W. L. Williamson, Memphis.
Dr. John B. Youmans, Nashville.

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*New committeemen for vacancies due to occur have not been appointed.

"Urinary Tract Infections," by Dr. John B. Nuckolls, Jackson. Discussion opened by Drs. T. J. Stockard, Lawrenceburg, and W. O. Baird, Henderson.

"Fractures of the Elbow," by Dr. Stanley Hill, Corinth, Mississippi. Discussion opened by Dr. Jere L. Crook, Jackson, and Dr. Maury McRae, Corinth, Mississippi.

"Amebiasis," by Dr. Leroy B. Brackstone, Iuka, Mississippi. Discussed by Dr. Ernest Smith, Selmer, and Dr. W. E. Boyce, Flatwoods.

"Cryptorchidism and the Torek Operation for Relief," by Dr. J. L. McGehee, Memphis. Discussion by Drs. J. W. McClaran, Jackson, and C. F. Gilbert, Corinth, Mississippi.

Knox County:

June 7—"Some Case Reports with Lantern Slides," by Dr. A. H. Lancaster. Drs. McCampbell, Acuff, and Hugh Reaves led the discussion.

June 14—"The Chronic Peptic Ulcer," by Dr. H. C. Long. Discussed by Drs. Waterhouse and Chumley.

June 28 — "Conservative Surgery," by Dr. W. S. Nash. Discussed by Drs. Waterhouse, E. G. Wood, and Dewey Peters.

The society adjourned until September 20, 1938.

Shelby County:

July 5—Case Reports: "Embolectomy," by Dr. M. J. Tendler. "Further Report on Use of Mandelic Acid in Epilepsy," by Dr. Nicholas Gotten.

Papers: "Some Considerations of the Prostate," by Dr. C. S. Paddock. Discussed by Drs. C. D. Allen and T. D. Moore. "Treatment of Cancer of the Breast," by Dr. C. G. Andrews. Discussed by Drs. F. W. Smythe and R. L. Sanders.

Washington County:

July 7—"Hypertrophy of the Prostate," by Dr. C. W. Brabson. Discussed by Drs. Matthews and West.

"Backache," by Dr. J. L. Hankins. Discussed by Drs. Walter Hankins and Walker.

OTHER MEDICAL SOCIETIES

The Tennessee Valley Postgraduate Medical Assembly met in Knoxville, June 22, 23, 24, at the Hotel Andrew Johnson. The attendance was the largest in the history of the association and the program showed that a great amount of work had been done to make the meeting a success.

Men of national reputation discussed subjects covering the whole sphere of medicine, and although the speakers were internationally known, their presentation of their subjects was suited to an audience of general practitioners.

Each noon there were round-table discussions at the luncheon table, many questions being asked about papers read at preceding sessions.

The only serious complication that arose during the meeting was that Dr. J. R. Reinberger and a moving picture made by Dr. Joseph B. DeLee were scheduled to appear at 8:00 P.M. in competition to the broadcast of the Louis-Schmeling fight. It is reported that Dr. Bethea regretted that Tennessee doctors should consider missing a scientific program to hear a broadcast of a prize fight between a Negro and a Nazi. The situation was compromised by calling the scientific session at 8:10.

On Wednesday night Dr. E. A. Guynes, president, entertained the assembly at the Country Club. The banquet of Thursday night was at the Andrew Johnson Hotel. Dr. E. R. Zemp, toastmaster, and Dr. Louis A. Buie, Rochester, Minnesota, supplied the after-dinner speeches. Every session of the assembly was well worth the price and those present made a wise investment of their time and money.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Building, Nashville

Basal Anesthesia: The Use of Evipal Soluble by Rectum. Jones, Journal of American Medical Association, April 30, 1938.

It is estimated that more than a million and a half evipal intravenous anesthesia have been administered and that over 550 original articles have been written concerning it. While it is considered safe and nontoxic there have been reported sixty fatalities due to the relatively uncertainty of the dose, individual idiosyncrasy, and impaired liver function.

Evipal soluble by rectum has certain advantages over the intravenous method. It is nonirritating and its effects can be controlled, eliminating certain dangers inherent to the intravenous administration which is irreversible, and the technic is simple. As a basal anesthesia given per rectum only from one-third to one-half the amount of inhalation anesthesia is required.

The only disadvantages are it should not be used in subjects suffering from an impaired liver function or in subjects with myocardial degeneration. The reason for this is because evipal is detoxified in the liver and requires adequate circulation of blood to eliminate it.

OBSTETRICS AND GYNECOLOGY

By Hamilton V. Gayden, M.D.
Suite 234 Doctors Building, Nashville

Epilepsy and Pregnancy—A Review of the Literature and a Study of Thirty-Seven Cases. Arthur Baptisti, Jr., American Journal of Obstetrics and Gynecology, 35: 818, May, 1938.

The relationship between epilepsy and pregnancy is of interest to the obstetrician from three angles. First, does the disease influence the course of the pregnancy in any way and vice versa; second, what are the probabilities of transmission of this affliction to the offspring; and third, what are the means for differential diagnosis between an epileptic seizure and an eclamptic convulsion?

From the reports and opinions available and the facts revealed in this study of thirty-seven cases, it appears that the following attitude may justifiably be taken by the obstetrician: Epilepsy has no appreciable effect on the course or termination of a pregnancy. This report indicates that there is no general rule by which we may be guided, although in the majority, pregnancy has no effect on the epilepsy. Therefore, like so many other problems in obstetrics the treatment and disposition of the pregnant epileptic will depend upon the merits of each individual case and it seems that the number of patients who will require special handling will be in the minority. In the light of recent clearer knowledge the obstetrician may be of infinite help to his pregnant epileptic patient: (1) by dispelling the mysterious superstition which surrounds the disease he may establish a more helpful, less pessimistic attitude of mind regarding her own outlook. He should assure her that the probability of the transmission of the disease to her offspring is not so great as she probably thinks it is. In the most recent edition of the Oxford System of Medicine, Lenox very convincingly reports an exhaustive and thorough statistical study which reveals an heredity incidence of about ten per cent and he concludes that this may be a generous figure.

One final conclusion seems more certain. By specifically inquiring about the occurrence of seizures suggesting petit mal or grand mal at the first prenatal visit we may spare ourselves subsequent "pseudoeclamptic" surprise.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Local Use of Quinine in Ophthalmology. G. W. Robinson, American Journal of Ophthalmology, June, 1938.

The author records his results from the use of quinine. Sclerosing keratitis and old traumatic corneal opacities showed improvement in vision after using two to four per cent quinine ointment where dionin had failed. Good results were obtained with bisulphate ointment in recent and old corneal ulcers. One case of severe central corneal ulcer with hypopyon responded in a short period. Very little scar followed. Most gratifying results occurred in catarrhal conjunctivitis.

Quinine and optochin are considered highly beneficial in their effects on infectious organisms of the conjunctiva. They act synergistically and are unhampered by use of their supposed antagonists such as mercury, iodides, bromides, lead, zinc, copper, and ammonia. Both may be so combined over long periods of time without producing injury to any of the ocular adnexa.

PEDIATRICS

By John M. Lee, M.D.
Doctors Building, Nashville

The Undescended Testicle. Norman Nixon, M.D., Los Angeles, American Journal of Diseases of Children, May, 1938.

From observation on fifty-nine cases of cryptorchidism treated and from an analysis of results of treatment reported in the literature, the author draws the following conclusions:

1. The undescended testis must be placed in its normal position in the bottom of the scrotum before it has undergone the retrogressive changes which occur with puberty, if one is to prevent atrophy and other complications. As the three boys who showed almost complete atrophy of the undescended testes were ten, eleven and one-half, and twelve years of age, it would appear that these retrogressive changes can occur before the secondary sexual characteristics and the other manifestations of puberty are fully developed.

2. No result ever should be considered satisfactory unless the testis remains permanently in the bottom of the scrotum. Partial descent is not a satisfactory result and should not be reported as such.

3. It would seem wiser to minimize the possibility of spontaneous descent, admitting that it does occur after puberty in some instances, and to endeavor to place the misplaced testis in the normal scrotal position either by injection of a gonadotropic substance or by orchidopexy before the patient has reached his ninth or tenth birthday. Should one choose to wait, some testes may descend spontaneously, but irreparable damage will have been done to many.

4. Until recently the surgical treatment of cryptorchidism has been unsuccessful in too many instances. Surgical skill and uniformity of technic are essential to produce consistently the desired results. The Torek operation or one of its modifications, when properly carried out, will produce a satisfactory result in eighty per cent of the cases, a percentage far higher than that obtained with any other operation.

5. The use of endocrine therapy is justifiable in the treatment of cryptorchidism. A course of injections of biologically standardized extracts of the urine of pregnant women, given in adequate amounts over a limited period of time and in some cases repeated once or twice after several months of rest, will cause complete descent of at least one in four, or twenty-five per cent, of the undescended testes. If, after a reasonable period of time the optimum results have not been obtained, the child should be referred to a surgeon for repair of the anomaly. Because in some small boys the injections result in acceleration of the penile growth and occasional appearance of secondary sexual characteristics, it seems advisable to postpone such treatment until the child is seven or eight years of age.

Endocrine treatment at this age is advantageous. It not only brings about complete descent of at least twenty-five per cent of the testes, but when it fails to produce optimum results it segregates the boys in whom the organs would not descend spontaneously after puberty, which allows surgical repair of the anomaly before the retrogressive changes have occurred. In addition, the treatment has the distinct advantage of making surgical repair easier by enlarging the testis and the cord structures in most instances and by increasing the size of the scrotum.

ROENTGENOLOGY

By Franklin B. Bogart, M.D.

Medical Arts Building, Chattanooga

Roentgen Therapy of Infections of the Nasal Accessory Sinuses. Fred M. Hodges, M.D., Richmond, Virginia, Am. J. R. & R. T., Vol. 39, No. 4, p. 579, April, 1938.

Over a fifteen-year period, many routine sinus films on cases referred for chest films have shown: (1) That sinus disease is far more prevalent than is usually believed; (2) that, on account of the meager symptoms, its diagnosis is being overlooked in the majority of instances; (3) that the treatment is frequently inadequate; (4) that no accurate method of checking the results of therapy is in many instances being used routinely.

While many cases of acute or semiacute infection do yield to the routine treatment with astringents, packing, suction, washing, etc., other cases go on to form thick membranes, granulations, etc. These cases are one of the groups that respond well to roentgen therapy.

In acute conditions where the antra are absolutely dense, X-ray should be used only after the antra have been washed out. When the sphenoids and ethmoids are similarly involved, every effort should be made by washing and shrinking the ostia to establish drainage just prior to the use of X-rays. If this is not done, a rather severe reaction with increased pain may result.

A second group responding to roentgen therapy are the cases who have had a cough for months or years in whom a film shows cloudy ethmoids. Washings and the usual treatment gave little relief in most of these cases. In cases of this type, showing increased bronchovascular shadows with or without early bronchiectasis, roentgen rays are also used over the base of the lungs, as well as over the sinuses.

In atrophic sinusitis, X-rays have not been used.

In chronic hyperplastic sinusitis, with early polyp formation, results have been encouraging, but not as good as in the first two groups. Some cases are prevented from progressing into the last group, either by X-ray alone, or X-ray and a radical operation.

In the fifth group of chronic hyperplastic sinusitis, with extensive old polypoid changes where all sinuses are absolutely dense, some have had marked relief from roentgen therapy, but in most of this group, the results have been disappointing. In this group heavier filtration and larger doses are indicated. While only a small per cent of this group are benefited, the results are so gratifying in these cases that the procedure is worth while.

The technique usually used consists of 130 kilovolts, six millimeters aluminum filter, twenty-five centimeters distance. About 100 to 300 r, divided into three or four treatments, is given in ten days to two weeks.

SUMMARY

1. Sinus disease is a far more common, complicated, and serious condition than is realized by the general medical profession.
2. Almost every common cold that does not clear up within a reasonable time is a sinus infection. Many are due to allergy.
3. Preliminary sinus films on patients sent in for chest examinations disclose a great many unsuspected infections.
4. This many times enables the patient to be referred earlier to the rhinologist with better results from treatment.
5. Follow-up films to determine progress are just as important here as in other conditions.
6. In addition to the treatment by the rhinologist, many cases can be markedly benefited by roentgen therapy.
7. We believe there is a definite field for this method of therapy in carefully selected cases of sinus infections.
8. A wholehearted and sincere cooperation between the rhinologist and the radiologist is absolutely essential if the best results are to be obtained.
9. If the radiologist attempts to treat every sinus infection, regardless of type and without cooperation with the rhinologist, the method will certainly be brought into disrepute. This cannot be warned against too strongly.

SURGERY—GENERAL AND ABDOMINAL

By Battle Malone, II, M.D.
1400 Monroe Avenue, Memphis

The Effect of Recent Advances in Biliary Physiology on the Mortality Following Operation for Common Bile Duct Obstruction. T. S. Ravdin, M.D., et al., Surgery, 3: 805, June, 1938.

In this study 155 cases of common duct obstruction are considered, dividing them into three groups in order to show the results of improved knowledge and technique in handling this type case. Group I is composed of cases from 1922 to 1929, Group II from 1929 to 1933, and Group III from 1933 to 1937.

In Group I patients received only small amounts of intravenous glucose preoperatively, no high carbohydrate diet was given before operation in the early years, transfusions were rarely resorted to, bilirubinemia was not allowed to become constant, liberal doses of calcium were given, and open-drop ether was the anesthetic used.

In Group II the principal difference was that glucose was administered intravenously, both pre and postoperatively. Also high carbohydrate diets were prescribed and blood transfusions were given occasionally. Patients draining excessive amounts of bile were refed the bile through a stomach tube. The use of calcium was abandoned and ether and spinal anesthesia were used in about the same frequency.

In Group III glucose with and without saline was given freely by vein both before and after operation. Blood transfusions were given routinely pre and postoperatively. Gradual decompression of the biliary tract was practiced. Operation was carried out only after the bilirubinemia became constant. Tables are presented to show the differences in the mode of treatment and the resulting mortality.

In discussion it is pointed out that no tests give accurately the amount of liver damage present. The periductal parenchymal cells of the liver are damaged by pressure and obstruction to blood flow results in anoxemia. On sudden release of ductal obstruction there may develop a massive hyperemia and extravasation. In regard to liver glycogen content, it has been shown that chronic liver injury leads to an increased content of liver fat. Increased liver glycogen may displace some of the liver fat, but where there is fatty degeneration in the liver, a volatile anesthetic may produce some necrosis.

It is not understood just how the administration of glucose decreases the clotting time in obstructive jaundice, but it seems to have reduced the hemorrhage mortality. Neither nonionized nor ionized calcium is deficient in the blood of these patients unless there is an associated serium protein deficiency, hence calcium is given only where there is hypoproteinemia.

The use of blood transfusions has apparently lessened the degree of hemorrhage, although the incidence of this complication has not declined.

The anesthetic agent is considered important. The author's choice is spinal. Postoperatively the position of the patient is changed hourly and deep breathing reinforced if necessary by inhalations of oxygen and carbon dioxide. A transverse or subcostal incision is used routinely and as little time as possible is consumed during the operation.

"Liver shock" has become a rare complication. The largest single factor in the operative mortality of jaundiced patients was hemorrhage. It is routine to inject the tube in the common duct with lipoidal for X-ray visualization before the tube is removed.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.
By G. A. Williamson, Jr., M.D.
Medical Building, Knoxville

Urinary Findings in the Newborn. Charles E. Conrad, M.D., Southern Medical Journal, June, 1938.

For this report the urine of 190 infants of consecutive births were examined. All specimens were obtained during the first three days of life, fifty per cent during the first twenty-four hours, forty per cent during the first forty-eight hours, and ten per cent during the first seventy-two hours. Some were catheterized and some were voided into a sterile test tube.

Forty-five of the cases showed albumin, varying from a trace to four-plus. Thirty-nine showed pus in the urine varying from ten to 100-plus per high-powered field.

Four cases showed hyalin casts and six cases showed hyalin and granular casts. All cases were again examined at the end of ten days; twenty-three cases continued to show pus.

Sixteen cases had fever varying from 100 to 104.5 with the pus in the urine. Twenty-three cases had pus with no fever. Of nine cases with 100-plus pus cells only three had fever.

Fourteen of the cases with pus at birth were re-examined at two years of age. Of these, thirteen cases showed no pus in the urine. One continued to show pus. The urinary findings of the mothers in this group seem to have no relation with that of the infants.

The above findings give sufficient data to emphasize the importance of routine urine examinations in the newborn.

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ISSUED MONTHLY, Under Direction of the Trustees

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OFFICE OF PUBLICATION, 508 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXXI August, 1938 No. 8

THE DIAGNOSIS AND TREATMENT OF OSTEOMYELITIS*

HENRY G. HILL, M.D., Memphis

THERE ARE MANY types and stages of the condition known to the medical profession as acute osteomyelitis. In any discussion of the diagnosis and treatment, the type and stage of the disease to be considered should be specified to permit a clear understanding of the subject.

In 1925, after an exhaustive review of the literature, I published a paper on osteomyelitis in the TENNESSEE MEDICAL JOURNAL. I was much impressed with the diversity of opinions regarding treatment, particularly of the so-called hematogenous osteomyelitis. In this paper, therefore, I shall limit my remarks largely to that type. I shall not consider osteomyelitis secondary to or complicating infected wounds, soft tissue abscesses, abscessed teeth, compound fractures, gunshot wounds, amputations, and open operations on the bones.

Acute osteomyelitis is essentially a disease of childhood. The extremities of the long bones, near the epiphyseal discs, are primarily involved; in fact, the condition is in reality an acute metaphysitis. The femur is the site of the lesion in approximately fifty per cent of the cases, and the tibia in thirty-three and one-third per cent. Any bone, however, may be attacked. According to our experience, in the various locations, the order of incidence of the disease from the highest to the lowest is as follows: the femur and tibia above and below the knee joint, the tibia and fibula above the ankle, the lower end of the humerus, upper end of the radius, lower end of the radius and ulna, the tarsal bones, the crest of the ilium, the scapula, the cervical vertebrae, and the phalangeal bones of the fingers.

The lesion usually can be traced to a recent infection in the mucous membrane of the upper respiratory tract, or to some local infection of the skin, tonsils, teeth, glands, or intestinal tract. In the majority of cases, the organisms found are the staphylococcus aureus and some strains of streptococci. A definite history of trauma can be elicited in approximately one-third of the cases; injury undoubtedly plays an important part in determining the seat of invasion.

The records at the Baptist Memorial Hospital, Memphis, show that an average of twenty-five patients are treated for acute osteomyelitis in that institution annually. In approximately fifty per cent of these cases the disease is the direct result of injuries to the bones and primary infection such as is found in compound fractures and gunshot wounds. This would indicate that only twelve patients with acute hematogenous osteomyelitis are treated there each year.

Records at the John Gaston Hospital, Memphis, show that an average of ten patients with osteomyelitis of the hematogenous type have been admitted yearly for

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*Read before the Tennessee State Medical Association, Nashville, April 12, 13, 14, 1938.

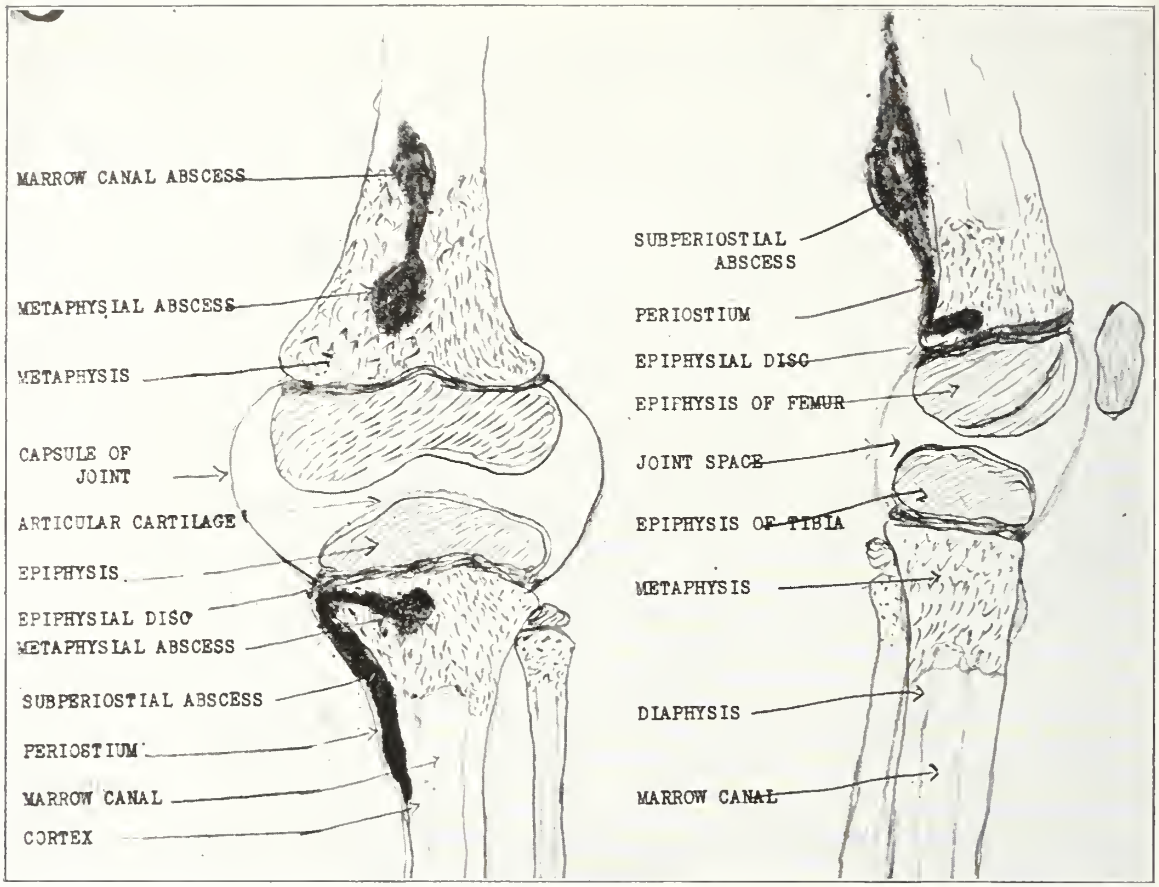

Fig 1. Pencil tracing of X-ray film made of knee joint of child six years of age, showing anatomical features and manner in which metaphyseal abscess (osteomyelitis) develops.

the past five years. A large majority of these patients were observed after the development of a subperiosteal abscess and the process was no longer localized in the cellular, metaphyseal end of the bone. A study of the records of any general hospital will convince one that a diagnosis of acute hematogenous osteomyelitis is seldom made in the early stage of the disease.

It has been said that "the vital factors concerning the disease are not fully recognized by the medical profession. The disease has so long been regarded as an infection of the medulla, as its name implies, that an early diagnosis is rarely made." The demand for early operation, before subperiosteal abscess develops, is sometimes hard to meet in practice. The difficulty of diagnosing and accurately locating the process makes the indication for operation uncertain in a number of cases. If it were generally known that primarily the infection is limited to the metaphysis, the diagnosis could be made promptly and the duration of the disease cut short in many cases.

A good working knowledge of the anatomic features of bone as related to its growth and development is most helpful in making a diagnosis. A long bone consists of the proximal and distal epiphyses, proximal and distal metaphyses, and the diaphysis. The circulation is derived from three sources. The nutrient artery, as a rule, enters the bone near the middle of the shaft and sends a branch to either end. These branches divide into numerous other branches and end in a network of capillaries in the spongy metaphysis. The periosteal blood supply furnishes nutrition to the cortex. The epiphysis receives its blood supply from the cortical branches, which enter along the epiphyseal line.

The epiphyseal disc does not fully undergo osseous transformation and become

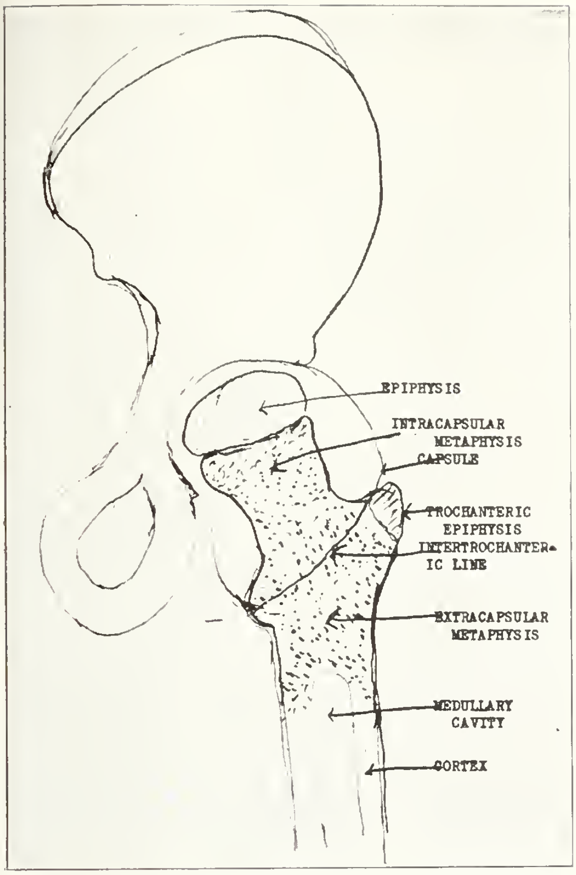

Fig. 2. Tracing of hip joint, showing intra- and extra-capsular metaphysis, eight-year-old child.

a part of the bone until early adult life. That osteomyelitis occurs principally in children and young adults is explained by the fact that the actively growing bone is less resistant to infection than adult bone tissue, and that trauma at the epiphysis occurs only before the disc is ossified. It is extremely rare that the disease develops in adult bone, except following direct injury.

The periosteum covers the shaft of the growing long bones, and, as a rule, is attached to both the proximal and distal epiphyseal discs. It provides a natural barrier against joint invasion when infection occurs about a joint with an extracapsular metaphysis. When a metaphysis is intracapsular, as is true at the proximal end of the femur, the periosteum does not protect the joint from direct spread of infection; the greater portion, instead of being attached to the epiphyseal disc, blends with the capsule. This explains why suppurative arthritis usually complicates acute osteomyelitis occurring in that region. Unquestionably, many cases of hip joint disease have their origin in acute osteomyelitis of the proximal metaphysis of the femur.

Examination and Diagnosis.—An early diagnosis must be based on the findings in a careful clinical examination, and, if possible, should be made before swelling occurs in the soft parts. The picture generally is that of an acutely ill child, between two and fifteen years of age, with a history of a previous focus of infection, and possibly a definite injury, as a sprain about the knee, ankle, or elbow, with severe pain in the neighborhood of a joint. The general examination will disclose a high temperature (102 to 104 degrees), rapid pulse (120 to 130), and a leukocyte count of 25,000 to 30,000. Superficial palpation in the painful region may reveal no tenderness, whereas prolonged deep pressure directly over the lesion will induce pain. This sign, in the early stage, i. e., the first forty-eight hours, I believe to be significant. There is no swelling, edema, induration or discoloration of the soft parts about the joint, nor any evidence of effusion or synovitis in the joint capsule. The local application of heat, massage, or manipulation aggravates the constant pain in the affected extremity.

Roentgenographic examination is always negative early in the acute stage. Bone changes are not observed until gross destruction of the cancellous bone has taken place, when a subperiosteal abscess has formed, and the tension has not been relieved. The roentgenogram shows a characteristic "spotty" invasion of the shaft, which may extend throughout the entire diaphysis. These spots are areas of decalcification at points where the infection has penetrated the cortex. When this condition is allowed to persist, the shaft may die en masse and become a large sequestrum, necessitating removal of the entire diaphysis.

Differential Diagnosis.—Acute osteomyelitis may sometimes be confused with "acute rheumatism" or infectious arthritis.

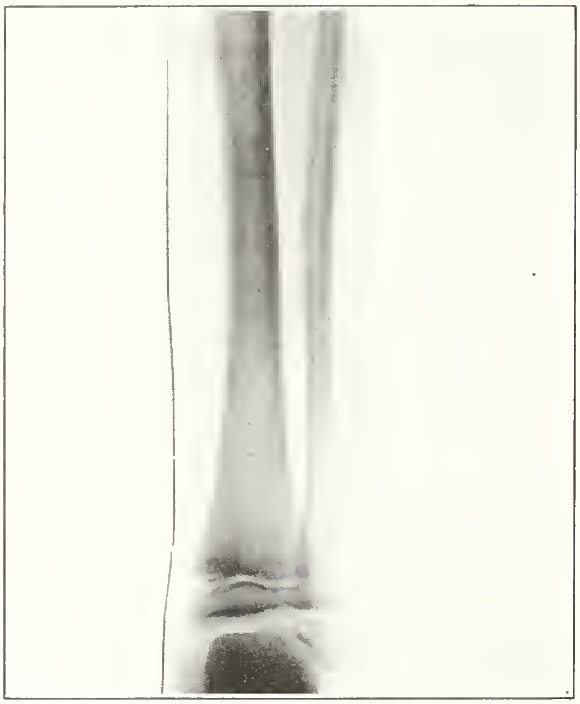

Fig. 3. First of a series of roentgenograms (three days after onset) in a case of osteomyelitis, showing no evidence of the disease.

In acute rheumatism the onset usually is not so severe and the pain not so intense; there is no localized point of tenderness, and the pain is in the articular area. Swelling occurs almost immediately. The application of heat locally does not aggravate the pain. The patient does not impress one as being so toxic, and the leukocytes are not particularly high.

In acute infectious arthritis there is a definite muscle spasm, and any motion of the joint involved produces excruciating pain. Other joint manifestations are usually sufficient to point to a diagnosis.

Treatment.—It is obvious that the treatment chosen necessarily depends upon the surgeon's conception of the pathologic process. Many of the older textbooks define acute osteomyelitis as "a very painful, destructive, urgent, inflammatory bone disease, due to an infection of the bone marrow by pyogenic organisms," "bone suppuration," or "bone furunculosis." The treatment consisted principally of free drainage, early opening of the medullary cavity, and, in many cases, through and through drainage and radical curettement of the bone marrow. Thus were most of us taught.

In the light of our experience, such treatment is pernicious and cannot be too vigorously condemned. An attempt to remove necrotic bone before it has formed, or to prevent spread of infection by curetting away normal marrow, is no more reasonable than bleeding a dehydrated, anemic child. Conservative surgical treatment, following the principles laid down by Starr,[1] I believe will usually meet the requirements. The patient's general condition should be closely watched, and dehydration should receive primary consideration.

When a diagnosis is made before the cortex has been perforated and while the inflammatory process is limited to the metaphysis, an incision is made over the area of tenderness through the skin, subcutaneous tissue, and periosteum. Care should be taken to keep the incision above or below the diaphyseal side of the epiphysis, to preserve the periosteal attachment to the epiphyseal disc when the infection occurs in an extracapsular metaphysis; otherwise, the infection might be carried into the joint cavity. If no frank pus is seen, a series of three or four holes are drilled through the cortex into the center of the bone. The holes are made at an angle of approximately twenty-five degrees with the epiphyseal disc and are placed one-half inch apart. These holes establish a line of least resistance, and within two or three days pus will drain freely; the infection will spread no farther, and there will be no sequestra formation. The wound is lightly packed with vaselinated iodoform gauze and closed with a few silkworm gut sutures loosely tied. Cultures should be made from the debris and material removed by the drill, even though no free pus is found.

The extremity is placed in a splint or cast for the purpose of physiologic rest. The pus will follow the gauze packing to the surface, instead of taking a subperiosteal course. The prognosis is very favorable.

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[1] Starr, C. L.: "Acute Hematogenous Osteomyelitis." Arch. Surg., 4: 567, 1922

Since the bone lesion is only a local manifestation of a blood stream infection, one should not expect all the constitutional symptoms to subside spontaneously. Fluids should be given liberally, and a close watch should be kept for the development of secondary lesions. These cause less acute constitutional and local symptoms, but should be treated in the same manner as the original infection.

Unfortunately, the surgeon rarely sees patients sufficiently early to make a diagnosis before a subperiosteal abscess has formed. When this stage has been reached, there is swelling and edema in the soft parts and the pain becomes more diffuse. The patient's general condition should receive proper attention, measures being instituted to raise resistance. Blood transfusion, sodium chloride, and glucose are usually indicated. The abscess should be thoroughly drained, but radical saucerization or extensive operation on the bone cortex is still to be condemned. The periosteum should not be widely separated from the living bone, and the bone marrow should not be disturbed unless the infection has definitely spread to the marrow canal. This can be determined by making several exploratory drill holes at proper points in the cortex. Adequate drainage should be provided in the metaphyseal cortex and further operations, if necessary, delayed until the sequestrum has separated and the disease has become subacute or chronic.

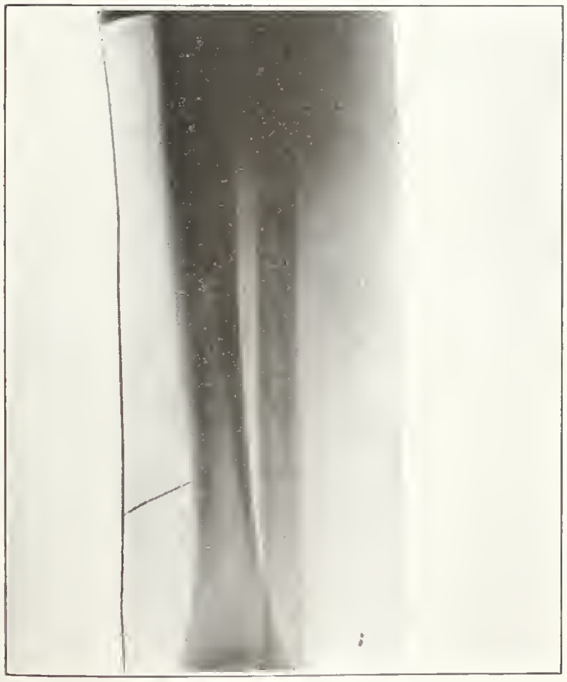

Fig. 4. Second of series (seven days after onset). No roentgenological signs at this time.

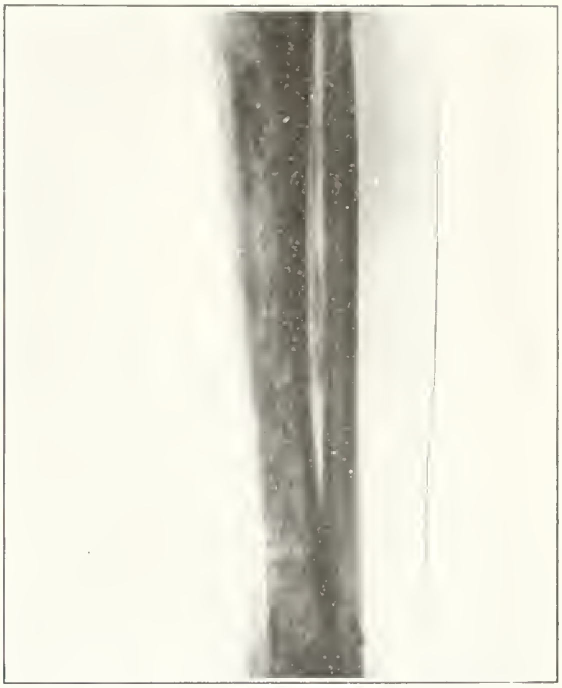

Fig. 5. Third of series seven weeks after onset of disease, showing typical spotty decalcification of tibia with sequestration of entire diaphysis.

CONCLUSIONS

1. The primary infection is not in the medullary cavity.

2. It is important that the surgeon be familiar with the anatomic features of growing bone.

3. Roentgen-ray examinations are negative during the first week or ten days.

4. Dehydration should be controlled and the patient's general condition closely watched.

5. Conservative surgical treatment is indicated as soon as the diagnosis is made in acute hematogenous osteomyelitis; radical surgery is unsound during the acute stage of the disease.

6. Incision carried through the capsule of the joint usually spreads infection into the joint cavity.

7. Mortality and morbidity are greatly reduced by proper treatment. Much of the

deformity which results from chronic osteomyelitis is preventable. It is essential from a social and economic standpoint that the medical profession as a whole understand better the vital factors concerning the disease.

DISCUSSION

DR. ROBERT C. ROBERTSON (Chattanooga): Dr. Hill is to be commended for bringing before us an ever-timely subject and presenting it in a clear, concise manner.

The pathology in acute, hematogenous, infectious osteomyelitis consists essentially of a bacteremia plus a localized bone infection. The bacteremia is usually transient. Where this is the case, recovery is prompt and rapid following proper early drainage of the involved bone. If the bacteremia is persistent, the outcome is fatal. Staphylococcus albus septicemia is probably the most frequently fatal of the more common types. The initial bone infection most often occurs in the metaphysis of one of the long bones, from which region it follows the lines of least resistance, with eventual involvement of the medullary cavity, penetration of the cortex, periosteal stripping, and soft tissue abscess formation. Impairment of the blood supply of the involved bone results from the spread of infection and is responsible for sequestration, epiphyseal separation, and other local complications which so frequently occur in cases seen late or improperly treated.

Early diagnosis will be made by the careful man in general practice in a high percentage of cases solely from the history and physical findings if he will remember that any patient with pyrexia of uncertain origin, who complains of severe constant pain localized in an extremity adjacent to a joint, and who presents a point of localized tenderness on firm bone pressure in this area probably has acute hematogenous osteomyelitis. The best diagnostician of this disease whom I know is one of our local general practitioners. I have seen numerous cases of acute hematogenous osteomyelitis with him and have yet to find him in error.

Swelling, hyperemia, fluctuation, and radiographic evidences of bone destruction are found only after extensive irreparable bone damage has occurred and after the golden opportunity for treatment has passed. The usual error of diagnosis is to call these cases acute rheumatic fever or acute arthritis. Osteomyelitis usually occurs in children between the ages of five and fifteen years, and it is exceedingly rare to find a monarticular acute arthritis in this age group. Monarticular rheumatic fever does not exist.

Once the diagnosis is made, prompt surgical treatment should be given. Many of these cases are dehydrated and anemic when first seen. In this event, intravenous fluids and blood transfusions are advisable preludes to any type of surgery and well repay the few hours' delay which their administration entails. The surgical indication is to drain the abscess with the minimum shock and at the earliest time consistent with the welfare of that particular patient. This is best done by means of multiple drill holes or by removing a cortical window at the site of infection. Further surgery in the acute stage will result only in increased mortality and morbidity and is to be condemned.

I have used local anesthesia in a small series and believe it to be the anesthetic of choice in selected cases because of decreased systemic reaction. Personal choice in local postoperative care is the Orr method of vaseline cone and cast, which not only permits free drainage and minimum postoperative care, but also decreases the dangers of epiphyseal displacement and pathologic fracture, both of which are very real.

General postoperative care consists of combating the septicemia, toxemia, and anemia. Blood transfusions are probably the most effective measures at our disposal at present.

The subject of acute hematogenous osteomyelitis is a vast field. The widely varying picture which it may present, the complications which may develop, and surgical treatment which may be necessary subsequent to initial drainage are phases foreign to our brief consideration today. The real message in Dr. Hill's paper is: Think of the disease, diagnose it early, and drain it conservatively. Upon all of these points I feel we can agree.

DR. H. G. HILL (closing): I wish to thank Dr. Robertson for his discussion which was presented in such a splendid manner.

The real message in the paper is that most of us were taught that osteomyelitis was due to infection, beginning in the marrow canal of the bone; it was thought for many years, until the work of Starr in 1922, or about that time, that the infection began in bone marrow. It has been proven, however, that the infection actually starts in the spongy tissues of the metaphysis near the epiphyseal line, perforates the cortex of the metaphysis (which is very thin in the growing child), and forms a subperiosteal abscess, later finding its way into the marrow cavity through the haversian canal.

As soon as the general medical profession and the general surgeons and the orthopedic surgeons become more familiar with the anatomic features of the growing bones and are convinced that osteomyelitis begins in the metaphysis, and when we can make a diagnosis before swelling occurs in the soft parts and before infection has spread, then the abscess can be drained early, and in many cases a serious crippling bone disease can be prevented.

A diagnosis should be made during first twenty-four, forty-eight, or seventy-two hours. Conservative surgical treatment should be instituted immediately, which will in many instances forestall chronic osteomyelitis.

I thank you.

ABSCESS OF THE LARYNX WITH REPORT OF A CASE*

STEWART LAWWILL, M.D., F.A.C.S., Chattanooga

THIS CONDITION is of interest because of the infrequence and its high mortality rate. The first case was reported by Roland in the thirteenth century. Laennec reported two cases. Morrel McKenzie reports thirteen cases in his textbook. Richards reports twenty-six.

The condition is most frequent in males and is more frequent in adults. The symptoms differ depending upon whether occurring in a child or an adult. In children it is ushered in like an attack of croup only more insidious in onset, gradually developing marked dysphagia. Expiration is comparatively easy and the cough much less brassy. On lying down the dyspnea is aggravated. In adults the onset is much slower and sometimes without any pain in the larynx. The dyspnea may be the only symptom outside of a constant clearing of the throat. Occasionally only a slight dyspnea is complained of and then the patient may die suddenly from suffocation. Richards reports a case of a man who merely complained of a slight dyspnea and then took a short walk and suddenly died. Pain is not always present. Tenderness on slight pressure over the larynx is not always elicited, but this pressure may for the moment increase the dyspnea. I might add here that the use of any opiates is always contraindicated in any condition where any obstruction to the airway exists. One is prone to think of the larynx merely as part of the windpipe and one does not often find an abscess occurring in the wall of an anatomical pipe or tube. As a matter of fact, however, the larynx is much more than a thin-walled tube. It is one of the most highly specialized organs of the body, having layers of mucosa, submucosa, perichondrium, cartilage, and muscle, and, in addition, several freely movable articulations between the cartilages. The most important cartilaginous structures of the larynx are the thyroid, cricoid, epiglottis, and arytenoids. The thyroid cartilage forms the prominence in the front of the neck commonly referred to as the voice box or Adam's apple, while the cricoid is the only complete cartilaginous ring. The cartilages are covered with the perichondrium and over much of their area there is a mucosa. In adults islands of ossification develop in all of the cartilages. The true vocal cords and the false vocal cords or ventricular bands, as they are called, are activated by a very complicated muscular system for placing the cords in position to produce different tones or sounds and for the additional purpose of closing the larynx and lifting it during the act of swallowing. The larynx and lower respiratory tract are protected in a large measure against the invasion of foods or liquids or foreign bodies by the trap-door action of the epiglottis and by the sphincterlike action of the arytenoids, aryepiglottic folds, ventricular bands, and vocal cords.

A special function of the cartilaginous framework of the larynx and trachea and its subdivisions is to prevent collapse of the breathing tube during inspiration. Being the gateway to the lower respiratory tract, the patency of the larynx is absolutely essential to the life of the individual.

ETIOLOGY

Trauma from external violence, intubation tubes, bronchoscopy may be the cause. Syphilis, T. B., and cancer may be the cause of a destructive process resulting in abscess. Debilitating diseases have been responsible for the abscess of the larynx in many cases. Among these was typhoid fever. Dr. Jackson tells me that during the typhoid epidemics many years ago he always had many cases of abscess of the larynx which he thought were due to pressure necrosis. Since typhoid has been practically stamped out by vaccination abscess from this cause is almost unknown. Repeated intubations may cause abscess. Herpes zoster is another rare cause.

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*Read before the Tennessee Academy of Ophthalmology and Otolaryngology, Knoxville, April 12, 1937.

Diagnosis

Direct laryngoscopy is necessary to make a position diagnosis especially in children. Indirect examination by throat mirror may suffice in adults. Dyspnea in any young child is an urgent reason for direct laryngoscopy, as it is the only means by which precise diagnosis and treatment may be accomplished.

Location

It would appear from the literature that abscesses in the epiglottis are more common than in other locations in the larynx. The cricoid and arytenoids are less frequently involved, but give a worse outlook when they are, especially if the infection is bilateral. In typhoid fever causing laryngeal abscess several of the cartilages were usually involved at the same time.

Symptoms

A patient with abscess of the larynx may have fever, rapid pulse, malaise, sensation of a lump in the throat, extreme pain during swallowing, hoarseness, and dyspnea so extreme as sometimes to require tracheotomy. There may be an external or an internal swelling or both. Pus may sometimes be recognized external to the larynx by fluctuation of this swelling or by needle puncture. Laryngoscopic examination will reveal an edema of the affected area and an intense redness over the site of the pus. The edema may involve any or all parts of the larynx, and may preclude a view of the cords. In abscess of the lingual surface of the epiglottis the swollen epiglottis may be so crowded backward and downward as virtually to occlude the larynx. The abscess may point in the ventricular band with serious obstruction to breathing. It may require incision or it may rupture spontaneously. If it ruptures within the larynx there is grave danger of inspiration of the pus.

Treatment

Treatment is based largely upon experience gained in treating typhoidal abscesses of the larynx. Drainage by incision is adequate only in some of the milder cases.

Tracheotomy is often necessary early.

Any incisions into cartilage is to be gone into only after long waiting and then only when definite pointing begins to show that pus is present. Too free cutting into cartilage has a tendency to spread the infection to new areas of cartilage. Since any destroyed cartilage is replaced by fibrous tissue, lumen of the trachea is bound to be narrowed. Therefore waiting for nature to sequestrate is apt to lead to less destruction than is too early and free incisions. "Utmost conservatism is called for in treatment of these conditions. The ordinary principles applying to cartilages elsewhere do not apply to the laryngeal cartilages in a state of inflammation of the perichondrium. It is better for necrotic sequestra, if any, to work their way out. Cutting down on the cartilage scraping and similar procedures usually result in total obliteration of the larynx."

The case which I wish to report was a man—T. H. L.—who at the time of the onset of his illness was seventy-two years old. During the Christmas holidays of 1934 he had had the usual round of highballs, cocktails, etc., and on New Year's day, 1935, had a little dizzy sensation and thought he might have a little upset stomach. He intended taking some soda water, but noticed that when he attempted to swallow, he strangled a little. The next morning, not feeling up to snuff, he had breakfast in bed, but when he attempted to swallow he noticed that he strangled severely and coughed violently. He realized then that his swallowing was so interfered with that he could not eat his breakfast. Each mouthful of food seemed to get into his trachea instead of going down his throat. I was called to see him and, at this time, tried him out with some water which also seemed to go down his larynx. It provoked a coughing spell in which he coughed up a black pus. I examined his larynx with a throat mirror and could not find anything wrong except that there was some oedema of the arytenoids. Phonation was perfect, but there was some sluggishness of the epiglottis. I also noted that the left side of the velum palati lagged a little. Paralysis of course, was thought of, but this would not explain the tremendous amount of black, foul-smelling pus which was present. I next thought of a diverticulum of the esophagus and since he gave a history of eating of considerable meats and fish during the holidays I also thought perhaps he may have had a foreign body lodged in the esophagus. We tried all sorts of positions for him to swallow, but a spill over into the trachea occurred with each attempt. We instituted rectal feeding and decided upon a waiting course. His swallowing did not improve so we then decided to investigate the esophagus. A scope was passed on the ninth day and no obstruction found. We then knew that we were dealing entirely with a paralytic condition. A feeding tube was then inserted through the nose and left in about one week. It was removed occasionally to test his ability to swallow.

A neurologist was called in consultation and he located the central lesion as occlusion of the post inferior cerebellar artery. He seemed to think this was a spastic occlusion and not a hemorrhage. He furthermore gave us great encouragement about the swallowing. Accordingly the feeding tube was removed on the twentieth day and the patient was gradually taught to swallow again. Within two weeks he was able to swallow most soft foods except mashed potatoes. For some reason he was unable to swallow finely ground foods. His improvement was steady except that he continued to clear his throat constantly and occasionally would spit up this foul black pus, the source of which we were never able to determine. The vocal cords apparently were normal, but the arytenoids remained swollen during all of this time. There was never any discomfort in the throat itself. On about the twenty-fourth day of March he developed a herpes zoster about the left face, neck and shoulder and coincidental with this an increase in the clearing of the throat and during this time he had several dyspnoeic attacks, particularly at night. The swelling of the arytenoids increased and there was oedema of the cords and subglottic area. After one severe attack of dyspnea that came on in the middle of the night it was decided that a tracheotomy should be done and not wait until it became a matter of emergency and have to be done in the middle of night without aid of aseptic surroundings, etc. Therefore, on March 29, a tracheotomy was performed under local anesthesia from which the recovery was uneventful. This was in the midst of the herpetic eruption and during this time the swelling within the larynx almost completely obstructed the airway so that the voice was a very hoarse tone at best. For a period of about eight months there was little or no improvement in the larynx. The patient continued to wear the cannula and had somewhat of a voice, but no airway adequate for his needs. There was drainage below, the cords and subglottic space were intensely swollen. At this time, November 5, 1935, a second operation was done through a high collar incision with the hope of draining a perilaryngeal abscess. I dissected up behind the larynx in the common wall between the larynx and esophagus, but never could locate any accumulation of pus in this region. However, there was a submucosal abscess above the tracheotomic cannula which was drained at this time. Considerable pus continued to drain from this locality for several weeks. A skin infection into the neck complicated the recovery; however, this healed in due course of time and since that time there has been improvement within the larynx. The airway has become larger, the cords have become less edematis, the arytenoids have again become movable. But there is not yet sufficient airway to permit of removal of the tracheotomic cannula. It has now been over two years since the onset of this condition. It is my opinion and that of the consultants who have seen this case that this was primarily a paralytic condition resulting from closure of the posterior inferior cerebellar artery and that the osteochondritis of the larynx was the result of the herpetic lesion. We have never yet been able to explain the presence of the black foul pus that was present at the very onset. This man continues in robust health and is able to carry on his business perfectly. He is now seventy-four years old and goes about everywhere breathing through a cannula and is another one of those cases of abscess of the larynx whose life has been saved by a tracheotomy.

THE PROCESS OF REFRACTION*

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SOME OCULISTS receive their first instruction in refraction in schools, where practice upon patients in clinics facilitates learning, while others obtain knowledge of the procedure from being apprenticed to older oculists in private practice. In either case, perfection in performing refraction must come after many hours applied to theory. Students in ophthalmology find it far more difficult to master than they believed before attempting it, and the majority develop considerable respect for it. Teachers may warn students against becoming discouraged because the process of refraction fails to unfold rapidly. It is so intricate that what has at one time seemed conquered appears hopelessly involved upon subsequent consideration.

Regardless of training and experience I doubt that many oculists are entirely convinced of their unfailing ability in refracting; and I dare say no oculist finds himself as capable in the early days of his practice as he had believed himself to be.

Textbooks in the theory of lenses and refraction are fairly numerous, but the student, without aid of practice, finds them difficult to interpret. The development of proficiency is by combination of theory and experience. It is well to remember that the aim of refraction is the securing of comfort for the patient not necessarily the *fitting* of *glasses*.

Because it occupies so much of our time, furnishes a constant source of earning, and, conscientiously performed, brings so much gratification, refraction is a subject which invites the interest of all of us. Its basic principles are clear to us, yet there are certain points in the performance upon which we, perhaps, do not all agree; at least, we find that our procedures vary. Certainly not in a spirit of argument; rather in the hope of hearing how others approach them, I beg to present some of these points:

I. PRELIMINARY EXAMINATION

From the beginning of the examination of a subject for refraction, the investigator is engaged in accumulating data which will influence his decision to prescribe, or not to prescribe, lenses. The visual acuity, which is noted first, raises the question of whether or not glasses will be required. In the presence of symptoms ascribable to eyestrain excellent acuity should not deter one from making the complete investigation, for it is well known that errors of focus so small as not to affect seeing are frequent causes of symptoms.

The balance of the extraocular muscles, for distance and for near, usually determined at the time of taking visual acuity, will further influence one's opinion as to the patient's need. Hyperphoria, exophoria, insufficiency or excess of convergence or divergence are not infrequently as great contributors to ocular discomfort as errors in refraction. They are, however, closely associated and correction of muscle imbalance could not be accomplished without correction of refraction. After the presence of heterophoria has been discovered, by use of the Maddox rod or other test, prism duction powers should be tested for distance and near. The strength of the prism which a patient can overcome base out before his eye should be approximately three times the strength of that which he can overcome base in before the eye. In other words, for comfort, adduction should be approximately three times stronger than abduction. Finding the near points of convergence and accommodation will furnish another aid.

II. THE CYCLOPLEGIC

When the preliminary examination has been completed the actual process of uncovering the error of focus is at hand. In young patients this brings up the question of the type of cycloplegic to be employed. Individuals up to eighteen years of age will require atropine, for their strong accommodating muscles will not be completely relaxed by a substitute. The younger the patient, the more important the accuracy of objective testing, and retinoscopy without total cycloplegia is hopeless. As the author of one textbook on refraction puts it: "It is better to use no cycloplegic at all than to imagine accommodation is paralyzed when it is not." The use of atropine ointment, often of less than one per cent strength, would seem more advisable than the use of solution. The toxic effect of the drug may be thus avoided and its cycloplegic action longer sustained.

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*Read before the Tennessee Academy of Ophthalmology and Otolaryngology, Knoxville, April 12, 1937.

After the age of eighteen, homatropine is, probably, the cycloplegic most universally used. In two per cent solution this should be instilled at intervals of fifteen minutes, or longer, six or seven times. The time element is important. For patients entering presbyopia, and for many well past this stage, cycloplegics are often found necessary. Of course, the drug used may be weaker and of less lasting effect than homatropine. It is sometimes practically impossible to find the error in eyes with good visual acuity without the aid of a cycloplegic, and, if the visual field and intraocular tension do not suggest glaucoma the drug may be used to advantage.

Retinoscopy carefully performed can be very accurate, and recourse to it as an aid in refracting older patients is often beneficial. In neither old nor young have I found retinoscopy with a relaxed accommodation (not by cycloplegic), as recommended by some refractionists, easy to perform or accurate enough to be of value.

The subjective, or trial case, procedure need not be discussed here. In this the practice of all careful examiners is much the same. It provides a method of checking the objective findings made with the retinoscope or ophthalmometer, yet its value is lessened by an active or partially active accommodation. We are all familiar with the trying experience of trial-case refracting when the patient complains that the test letters "come and go."

III. The Prescription

Having determined the kind of lens needed to correct the focus in the eyes separately, the actual prescription is to be considered. We aim for comfortable binocular function.

(a) Simple Errors: The decision will be affected by several factors, the first of which is the type of refractive error present. It is an accepted theory that full correction of simple myopia at any age makes for comfort, whereas full correction of simple hyperopia in young subjects is apt to produce discomfort. However, prescribing a correction for all the error in a hyperopic patient with esophoria will relieve discomfort. The part that the basic errors play in heterophoria has been long recognized. While the correction for myopia, by calling into use the accommodative effort, will stimulate the converging impulse and counteract developing exophoria, the correction for hyperopia will relax the accommodating apparatus, discourage convergence, counteract esophoria. In the same manner, when exophoria exists, a correction for simple hyperopia will increase it. Except where the error is high or esophoria exists, the hyperopic eye would best be allowed to do its own focusing. In any case, it would be well to consider the muscle balance carefully.

Although, in extremely high myopia, a full correction may at first be difficult to wear, the patient who will be persuaded to wear it usually finds it more comfortable than a lesser correction. The practice of changing any lens, prescribed after carefully correlating all existing factors, before the utmost effort on the part of patient and oculist to obtain adjustment to it, is to be discountenanced.

(b) Astigmatism and Anisometropia: In prescribing lenses for astigmatic eyes, it is generally conceded that the full cylindric correction should be advised. When the astigmatism is great, or anisometropia is present, some writers suggest a gradual process of adjusting the glass to the patient's comfort by prescribing increasingly strong cylinders at short intervals until the full strength is tolerated. Given a cooperative patient, it is my opinion that it would be better to prescribe the full cylinder after explaining to the patient the possbilities of its being at first difficult to wear. In spite of the fact that it is not always successful, the adult patient should receive the advantage of an attempt to wear full correction for anisometropia, particularly if visual acuity in the more ametropic eye can be appreciably improved thereby.

Children, practically always, will tolerate the correction, and, in addition to the lenses, should be given exercises directed toward stimulating visual acuity and muscle balance. Of course, the adjustment of such lenses in the spectacle frame is quite important, and one should make sure of this before encouraging the patient to persevere.

For compound astigmatic errors, in myopia, the full correction would be indicated. In hyperopia, for patients not presbyopic, a reduction of the spheric strength of the lenses may be necessary. Here, as in simple errors, the presence of heterophoria will influence the prescriber. With esophoria, reduction of the sphere will defeat success; with orthophoria or exophoria it will enhance it. The amount to reduce is the question. Practically always the spheres would be cut equally. Except when the spheric error is quite great, a good practice is "to reduce the maximum." This would mean that from both lenses the spheric strength of the stronger would be removed. By doing this the eyes are given equal errors, which, being hyperopic and spheric, can be overcome by accommodation. Such an arrangement would insure clear focus by natural accommodation, and, at the same time, would preserve the accommodation-convergence relation. Unequal errors are created by glasses in which a part of the maximum convex spheric correction remains, and the effort to overcome them (if we suppose that the accommodating efforts are equal in effect) produces an astigmatic focus in the eye wearing the stronger lens. Of course, in high hyperopia, the full sphere will not be removed; however, to preserve balance of intrinsic and extrinsic ocular muscles as much of it as possible should be deducted.

(c) Prisms: It is argued that extraocular muscle imbalance calls for the inclusion of prisms, laterally placed, in lenses. For ordinary usage the practice does not help. The presence of the prism only invites further relaxation of those muscles whose activity is already weak, and, therefore, increases, rather than improves, the disorder. In selected patients prisms may be thus prescribed, particularly for those who fail to obtain relief from correction of refraction, exercise, or surgery upon the extraocular muscles. Until every other attempt has failed, it would seem that laterally-placed prisms in glasses should not be ordered. Low degrees of hyperphoria call for vertically placed prisms; however, until the full amount of the disturbance present has been uncovered, this practice may not seem successful. A correction for the amount which is at first manifest may, by relaxing the muscles opposing it, render more of the deviation evident. In this case, a prescription for prisms of increasing strength would be required from time to time. It would seem more desirable to find the complete deviation as by the occlusion test and correct it at the start. Vertical muscle imbalance often underlies lateral imbalance, and this point should not be overlooked.

(d) Slight Errors: Concerning the question of prescribing glasses to correct small errors in focus there is considerable controversy. Many contend that, for children especially, the practice is wrong. On the other hand, it is true that simple errors are known to be just as responsible, if not more so, for symptoms of discomfort in adults than large errors are. Should the oculist, desirous of winning parents' favor, risk the comfort of children, who are often unable impressively to describe their complaints? Objective symptoms will probably render him disposed to prescribe the glasses. He may be inclined to disregard subjective ones. It might be well to assume that glasses will do no harm, except to a mother's pride, whereas they may do endless good in relieving a child's discomfort. Two things should be explained to mothers: (1) that wearing glasses does not "weaken" the eyes; (2) that eyestrain does not damage vision, but does damage comfort. One finds that most who write upon refraction devote many pages to the correction of small errors.

For adults who complain of symptoms of irritation of the eyelids, and who present mild catarrhal conjunctivitis or blepharitis, refraction and the correction of small errors should be the first step in treatment. Instillations and local applications will fail as long as the underlying cause of the disturbance remains. I do not agree with those oculists who court their patients' favor by deferring advice to wear glasses as long as possible. In the presence of symptoms, the sooner a correction is advised the better. On the other hand, absence of symptoms, though examination reveal error in focus, should persuade one not to prescribe lenses. In other words, although refraction is a fairly exact procedure, its value to our patients comes only through our skill in judgment.

Every patient who so desires deserves the benefit of the investigation; one is always justified in performing it. That the procedure so frequently results in the prescribing of lenses is because practically all those who have ametropic eyes develop symptoms of eyestrain. Sometimes the question of whether or not glasses are needed is a difficult one. Then to err in advising them would be preferable to erring in failure to advise them. The financial inconvenience to the patient will be slight; and, if one's conscientious desire to assist him has impressed him, he will not feel that he has suffered injustice. We have but to remember that the aim must be to secure comfort if we would save ourselves from criticism, which might be just were we arbitrarily to fit our patients with glasses. Following the aim will require careful attention to the many details in the process of refraction.

INTERNAL DERANGEMENTS OF THE KNEE JOINT*

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THE MULTIPLICITY of derangements that befall the knee joint from both injury and disease render it a most interesting subject for study. Its peculiar anatomical and physiological characteristics play an important part in the mechanism of many of its classical injuries, therefore a brief review of these characteristics will greatly facilitate a discussion of its varied pathology.

From a bony standpoint the knee joint is composed of two enlargements of the distal end of the femur articulating with two rather shallow depressions on the proximal end of the tibia and a large sesamoid bone, the patella, situated within the tendon of the quadriceps muscle on the anterior surface of the knee. It is quite obvious that little if any of the strength of the joint is derived from its skeletal make-up.

Between the articular surfaces of the femur and tibia are the internal and external semilunar cartilages. These are crescent-shaped bodies which on transverse section present a wedge-shaped appearance, being widest along the periphery, tapering to a feather thinness towards the center of the joint. Their positions within the joint are maintained by the coronary ligaments which attach the periphery of the cartilages to the margins of the tibia and the attachment of both the anterior and posterior horns to the nonarticular surface of the tibial head. The external coronary ligament is almost twice the length of the internal, giving the external cartilage much more freedom and a wider range of motion within the joint space than the internal. The semilunar cartilages serve several functions. First they tend to deepen the rather shallow articular facettes of the tibia; second, they help to prevent lateral motion of the knee by acting as a wedge between the tibia and femur, but perhaps their most important function is in the lubrication of the joint surfaces. The cartilages are not covered by synovial membrane, but they are bathed in synovial fluid, furnishing a wedge-shaped film of synovia between the joint surfaces. On either side of the joint are strong ligaments, the internal and external lateral ligaments. The internal lateral ligament is a long fan-shaped structure attached to the internal condyle of the femur and internal tuberosity of the tibia, and a further significant fact is that the internal semilunar cartilage is firmly attached to it at least along the posterior margin so that stress and strain on the ligament is in part transmitted to the cartilage. The external lateral ligament, long and cordlike, anchors the external condyle of the femur to the head of the fibula, which, with the biceps tendon, strengthens the outer surface of the joint. It is entirely separate from the capsule of the joint and is not attached to the external semilunar cartilage.

The internal and external lateral ligaments are the principal factors preventing lateral motion of the knee.

Arising from the tibial spines and inserted into the intercondylar notch of the femur are the strong crucial ligaments, the anterior preventing forward motion of the tibia on the femur and the posterior preventing backward motion.

Anteriorly the joint is covered by the broad, strong aponeurosis of the quadriceps muscle continuous through the patella with the patella tendon which is inserted into the tubercle of the tibia. Much of the strength of the knee is gained from the quadriceps apparatus and it is the only mechanism preventing rotation of the joint until it is locked in full extension. Quadriceps insufficiency is frequently the cause of recurrent sprain of the knee joint, for it is the first line of defense and if it gives way abnormal and prolonged strain may cause ligamentous rupture.

Behind the patella ligament and below

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*Read before the Tennessee State Medical Association, Nashville, April 12, 13, 14, 1938.

the patella is the wedge-shaped infrapatellar fat pad, intra-articular but extra-synovial.

Posteriorly the joint is covered by the hamstring muscles and popliteal space with its vessels and nerves.

With so complicated an anatomical structure it is easy to understand the innumerable pathological possibilities in the knee joint. It is the purpose of this paper, however, to discuss only those lesions resulting from trauma.

Injuries of the semilunar cartilages are the most frequent traumatic derangements. The usual mechanism of these injuries is a tortion strain of the flexed knee grinding the cartilages between the tibia and femur. Injuries of the internal cartilage occur much more frequently than those of the external, various series ranging from three to one to six to one. The attachment of the internal cartilage to the internal lateral ligament has long been given as the explanation for this disproportion. Since a strain on the ligament is transmitted to the cartilage, fixing it within the joint so that it cannot avoid the grinding action of the internal femoral condyle. The importance of the internal lateral ligament in the mechanism of internal cartilage injuries has most likely been overemphasized as strain or tearing of the internal lateral ligament without injury to the cartilage is a definite clinical entity, and the displaced cartilage is always a torn cartilage rather than a severance of its attachment to the ligament.

The most plausible explanation of the disproportion of these injuries is, first, the difference in length of the coronary ligaments, the internal being only slightly more than half the length of the external, not allowing the internal cartilage the excursion of freedom to avoid injury; second, the difference in shape of the two cartilages. The external cartilage is a circular ring accommodating the external condyle of the femur and it is better adopted for rotation than is the less circular internal cartilage; and third, there is less likelihood of damage to the external cartilage because it does not have to accommodate itself to the so-called gliding movement which the internal femoral condyle makes it full extension, for it is the pivot around which this movement takes place.

Bristow found much diversity of opinion as to the mechanism of the injury upon a review of operative findings reported at a meeting on the subject in 1924, but after a careful analysis of these reports his conclusions were that "the primary injury to the cartilage is a longitudinal tear or split in the substance of the cartilage, caused by the direct compression or grinding action of the femur on the tibia, with the added trauma caused by a rotation force when the weight is borne on the leg with the knee flexed," which conclusion appears to be the most plausible. The explanation of the displacements upon opening the joint being that the longitudinal tear may be complete or confined to either the anterior or posterior portion of the cartilage. If complete the central portion may lie in contact with the peripheral portion or it may be displaced toward the center of the joint, the so-called "bucket handle," or it may be ruptured in the center. In the anterior and posterior types there may be a simple longitudinal tear with no displacement or either end of the central fragment may be torn loose, allowing it to be displaced towards the joint.

The classical symptoms of cartilage injuries are: history of rotation strain on the flexed knee, the knee gives away and is locked in the position of flexion and the patient can limp on toes, but cannot touch heel to the ground. The knee cannot be straightened until it is manipulated. The patient feels something slip within the joint then full extension can be accomplished. The injury is followed by swelling and pain in the joint. Subsequent injuries may be much less severe, but follow the same chain of events. With such a history the diagnosis is easy, however, two or three weeks later the diagnosis may present much more difficulty. "Locking" of the joint in the sense used above is far from a constant finding. The swelling has subsided, but there is still a feeling of instability. There is tenderness to pressure over the injured cartilage, and among the most constant findings is an inability of complete extension. When motion is within ten to fifteen degrees of complete extension there is a rubbery blocking of joint and an effort at forced extension is attended with pain. Another very useful finding is elicited with the thigh in acute flexion and the knee flexed to a right angle. Internal rotation of the tibia in this position is attended with pain in injuries of the internal cartilage, and external rotation is painful when the external cartilage has been injured. Occasionally, however, an accurate diagnosis cannot be made until the joint is opened.

In treatment of these injuries conservation should be adhered to when possible. Careful anatomical study has demonstrated that the semilunar cartilages are nourished with blood vessels only for an extremely short distance along its periphery, and animal experiments have proven that a break or incision into the substance beyond this narrow peripheral border makes no effort to heal. So the customary practice of immobilization of the "first" cartilage injury cannot be expected to affect a cure unless the damage has been to the coronary ligament or the extreme periphery of the cartilage itself. It is impossible of course to determine the exact location of the damage to the cartilage without operating, and since a certain percentage of them are ligamentous or peripheral it is well worth while to give conservatism a thorough trial before surgical removal is advised. Subsequent injuries or a primary injury failing to respond to adequate immobilization for a sufficient length of time should be treated by the surgical removal of the injured cartilage. Time will not permit a discussion of the operative technique, however, a properly-performed operation usually restores the joint to normal function.

Sprain or rupture of the internal or external lateral ligament may result from forced abduction or adduction of the knee, injuries to the internal ligament being more frequent than those of the external. The mechanism is a forced abduction of the knee. The rupture is usually incomplete and accompanied by pain at the site of attachment of the ligament to the femoral condyle, especially at the posterior border of the ligament, effusion into the knee joint, and frequently an inability of complete extension from muscle spasm. This can be overcome by constant gentle traction and the limitation of extension is not accompanied by the rubbery blocking felt in cartilage injuries. If there is an actual tear of the ligament there will be abnormal lateral motion of the fully extended knee; abnormal abduction in injuries of the internal ligament and abnormal adduction if the external ligament has been damaged.

Rupture or strain of the crucial ligaments usually follows extreme violence, those involving both the anterior and posterior ligaments must result from such violence as would produce a dislocation of the joint. Avulsion of the tibial spine may or may not accompany these injuries. There is a history of a violent injury, effusion into the knee joint and instability of the knee. The anterior crucial ligament is tense when the knee is in full extension so when there has been a rupture of the anterior ligament forward motion of the tibia on the femur is possible with the knee in full extension. The posterior ligament becomes tense with the knee in full flexion and when this ligament has been torn, backward motion of the tibia or the femur can be accomplished with the knee in acute flexion.

Here too conservatism is the method of choice in treatment. Most acute sprains and even ruptures of the ligaments will respond most satisfactorily to adequate immobilization for a sufficiently long period of time, resulting in a painless stable knee. Should conservatism fail, however, there have been numerous reconstructive operative procedures described consisting of fascial transplants and transplantation of the normal ligamentous attachments to a different location that offer very satisfactory results when properly carried out.

Fracture or avulsion of the tibial spine may result from the same type injuries that produce rupture of the cruciate ligaments, presenting much the same symptomatology. It will be noted that no mention has been made of the X-ray appearance of the knee joint up to this point. However a careful X-ray study should be a part of all routine knee examinations. The diagnosis of injuries of the tibial spine can be made from the X-ray films, and if there is little or no displacement cure may be expected from immobilization. If the fragments are separated, however, they must be replaced and fixed by open operation.

Fractures of the tibial tuberosities resulting in alteration of the articular surface follow certain severe injuries and may or may not be associated with other internal derangements. The diagnosis is easily made from the X-ray film and treatment consists of an elevation of the depressed tuberosity until the normal articular surface has been restored to the tibia and immobilization until union has taken place. Open reduction is sometimes necessary before this can be accomplished, but it is of extreme importance that the normal architecture be restored to the articular surface if possible. The tibial tuberosities are cancellous bone rich in blood supply so that prompt union almost invariably results. However, it is possible for this injury to result in nonunion, requiring surgical intervention to promote callous formation.

Fractures of the patella result from a direct blow such as falling and striking directly on the knee or a blow to the knee against the instrument panel in an automobile collision. The diagnosis is easy. There is pain and swelling of the knee. If there is separation of the fragments the gap can be palpated and the two fragments are freely movable independent of each other. Active extension of the knee is impossible as contraction of the quadriceps muscle elevates the proximal fragment and is not transmitted to the tibia through the patella ligament. On the X-ray film the two fragments can be seen with a varying degree of separation. With separation of the fragments these injuries should always be treated by open reduction. It is best to immobilize the acute injury for a period of one week to ten days to allow hemorrhage to stop and minimize the possibility of infection. At operation a rent in the quadriceps aponeurosis is always found on either side of the fractured patella, sometimes extending into the muscle substance itself. The joint space should be cleared of all clots and free fragments of bone. A careful inspection of the joint can easily be made through the torn aponeurosis and fractured patella and any injury detected should be corrected. The torn quadriceps should be carefully sutured and the patella repaired. We have found a single coronal wire suture passing through both fragments to be the most satisfactory as it will allow early mobilization preventing much of the postoperative stiffness.

Nonunion of transverse fractures is not uncommon if the fragments have not been firmly fixed. Should this occur a second operation is necessary at which time the fractured surfaces are freshened and fixed with a wire suture. A free bony transplant from the tibia across the fracture line will help to insure union.

Between sixty and seventy-five per cent of the reported cases of recurrent dislocations of the patella are either the direct or indirect result of trauma. They may vary from an occasional repeated dislocation requiring reduction and immobilization each time to the patella that rides over the external condyle of the femur each time the knee is flexed. There is usually some mechanical background such as severe knock-knee, underdevelopment of the external femoral condyle, etc. The knee is unstable and painful, giving away without warning.

Several corrective operative procedures have been described. The method of choice depends upon the anatomical condition present. Genu valgum should be corrected by osteotomy. Depressed external femoral condyles may be elevated by the method of Albee. A wreathing operation of the capsule with or without fascial transplants and fascial fixation of the patella to the tibia or femur may be successful, but the operation that is perhaps most universally employed is the transplantation of the patella tendon with a portion of the tibial tubercle to a point on the internal surface lower down on the tibia.

Foreign bodies such as missiles following gunshot wounds, fragments of glass, needles, etc., follow a history of such injuries and most of them can be detected on the X-ray film. Their only treatment is surgical removal. Here, too, a rest period of a few days before operation may minimize the possibility of infection.

Pellegrini-Stieda's disease is a rare complication of an untreated injury of the internal lateral ligament. It is a semilunar-like formation of bone in the region of the internal condyle of the femur appearing on the X-ray three or more weeks after the injury, resulting from a partial tear of the internal lateral ligament and its associated tendonous structures. This condition is thought to be a metapasia from ligamentous tissue to bone initiated by trauma and continued by the irritation from motion rather than of periosteal origin. Only a few cases have been reported in the literature, some of which were treated by surgical removal, while others were treated conservatively. Apparently the best results are obtained from conservation as recurrence frequently follows operation.

Ossification of tendons or ligaments or myositis ossificans may result from much the same mechanism as Pellegrini-Stieda's disease. Their presence may be determined by palpation and X-ray. Treatment is governed by their size and location. If they interfere mechanically with the function of the joint they should be removed.

The nontraumatic derangements are briefly:

1. Hypertrophy of the infrapatellar pad of fat or its processes.
2. Loose bodies including hypertrophied synovial fringes.
3. Intra-articular exostosis of spurs.
4. Intra-articular and periarticular adhesions.
5. Quadriceps insufficiency from disuse or disease.
6. Periarticular ganglia.
7. Osteoarthritis and other forms of chronic arthritis both tuberculous and nontuberculous.
8. Extra-articular exostosis interfering with tendon function.
9. Affections of the epiphysis including chronic abscess and neopasm.

Some of which may appear as sequelae of trauma.

In conclusion a brief description of the routine examination of the knee will be given.

On inspection the presence of swelling, effusion, discoloration, muscle atrophy, masses, etc., may be detected. Localized points of tenderness, masses, temperature, separation of patella fragments, crepitus, presence of a click or snap, etc., may be determined by palpation. The range of both active and passive motion and the presence or absence of medial, lateral, forward or backward motion should be ascertained. The knee and hip flexed and the knee rotated both internally and externally to determine the presence or absence of pain. Mensuration for comparative circumferences of the thigh, knee, and calf and a careful X-ray study in as many planes as is necessary to determine the presence or absence of pathology.

DISCUSSION

DR. GEORGE K. CARPENTER (Nashville): Mr. Chairman and Gentlemen: Dr. Penn has certainly given a very fine paper on the knee joint. He has covered a subject which is rather large, but he has covered it very thoroughly. In my five minutes I will have time to say very little, so I will confine my remarks to the semilunar cartilage or the meniscus of the knee joint. As has been said, it may be fractured, it may be dislocated, or it may be relaxed. I will say a little more about what I call the relaxed cartilage in a few minutes.

The lantern slides which Dr. Penn has shown exhibit very well the different types of fractures that these patients may have of the meniscus.

When a patient injures the knee joint and the meniscus is injured, it may be, as he said, fractured or dislocated; the knee is usually locked, or if it is not locked it will not extend, as he has brought out so well in his paper. I think these cases should have an attempt made to reduce the cartilage without an open operation. I believe the manipulative procedure should be very gentle, for certainly if you have a displaced cartilage in the knee joint, you have no way of knowing in which method it is displaced, nor do you know whether you can reduce it or not. If you make any violent effort, and particularly if it is done under an anesthetic, you may do a great deal of damage to the cartilage or the condyle of the femur. In a good many of these cases, I think in a majority of them, they can be reduced and should be put up in plaster cast for four to six weeks. When they come out of the plaster physiotherapy is indicated, and the heel of the shoe should be built up on the inside for a long time.

If the cartilage cannot be reduced as shown by inability to fully extend the knee, an operation is necessary. Of course, we have the case that is reduced and then in a few months from some trivial injury it is dislocated again. This type of case, once it recurs, I believe should be operated on without further delay. Of course, if for some reason the patient should not be operated upon at that particular time or should not be operated on at all, you have to palliate a few months so as to operate on him at a more suitable time. Before operation the patient's cartilage may be reduced again and he must be careful in his athletics, games, walking, bending, and squatting. Sometimes the cartilage is so placed that it cannot be reduced and is permanently locked; then of course it must be operated on without delay.

I mentioned the relaxed cartilage. That is the type of cartilage that has been injured, is not dislocated or fractured, but it sways back and forth into the joint; it is an irritant and causes synovitis, fluid in the knee joint. This type of cartilage should be removed. It is harder to take out and the postoperative treatment is a little longer.

I do not know that there is anything special that I can say about the operation. I feel you should make the incision large enough in these cases so that you can see in the joint and take out the cartilage without unnecessary pulling and jerking and yanking in the joint.

In the aftertreatment I do not believe there is a need for plaster casts. I think bulky dressings from the toes to the groin for four to seven days is all the splinting that is necessary. I do not believe that we should encourage the patient to get his motion back too soon. I do feel that he should be in bed for two weeks after the operation, and then on crutches for two more weeks.

I enjoyed Dr. Penn's paper very much.

DR. ROBERT C. ROBERTSON (Chattanooga): Mr. President and Gentlemen: Dr. Penn has covered such a wide variety of subjects in his discussion of internal derangement of the knee joint that I shall limit my remarks only to those in which loose body formation is present. The most frequent cause of derangement is injury to one or another of the semilunar cartilages, most frequently the internal. Another frequent cause is rupture of a portion of one of these cartilages with subsequent loose body formation. The other two great groups of loose body formation come either from the synovial lining of the joint itself, as osteochondromatosis, or from one of the articular surfaces of the joint, most frequently the articular surface of the femur, in which condition we have the typical case of osteochondritis dissecans. This condition has also been reported arising from the patella.

The characteristic clinical symptoms of all of these cases may closely simulate each other. The usual history given of a ruptured internal semilunar cartilage is a lateral blow with the knee in slight flexion. A history of injury is likewise frequently obtained in other loose body formation, either osteochondritis dissecans or osteochondromatosis.

A point which I think should be stressed is that loose body formation is often present without true locking of the joint. I find that the most frequent complaint on the part of these patients is the sensation of "the knee giving way," causing the patient to either stumble or fall, combined with pain in the knee joint. Any of the lesions mentioned may give rise to just these symptoms.

The most frequently encountered physical findings in rupture of the semilunar cartilage are inability to completely extend the knee, and tenderness on pressure over the injured cartilage. I wish to repeat that a history of locking is not necessary to cause the clinician to suspect loose body formation within the joint.

Osteochondritis dissecans and osteochondromatosis may give rise to symptoms which are quite identical from a clinical viewpoint. It is only upon physical and X-ray examination that a differentiation can certainly be made. As a rule, loose body formation other than ruptured cartilage is demonstrated radiologically by a small ossified center of the loose body.

At this meeting it should be particularly emphasized that operative removal of loose bodies and damaged semilunar cartilages is a very successful operation when properly performed. It is an operation of delicacy rather than an operation of seriousness.

I recall the statement of one of my old teachers, Dr. John L. Porter, who said to me many times: "Always operate your ruptured semilunar cartilages." To do so with proper care and gentle technic will result in a highly successful outcome in approximately ninety per cent of the cases.

DR. R. W. BILLINGTON (Nashville): Dr. Penn mentioned the question of immobilization of the knee in conservative treatment in rupture of the lateral ligaments of the knee and avulsion and fracture of the tibial spine. He did not say in what position he would immobilize the knee in these cases.

I would like to call your attention to the fact that the lateral ligaments, both external and internal, are on tension normally when the knee is fully extended. As you know, a ligament which is torn should not be immobilized on tension. Therefore, the knee should always be immobilized in flexion at least thirty degrees of flexion. In injuries to the tibial spine where a considerable piece of bone is broken off it is not safe to hold the knee in too much flexion because there may be some displacement or some callous formation which may block extension of the knee when you take it out of the splint or cast. So it should be flexed only slightly, ten or fifteen degrees, and immobilized in that position.

For ruptures of the crucial ligaments, the limb should also be immobilized with the knee in flexion. These ligaments are also on tension when the knee is fully extended. Mr. Martin of Newcastle, England, I think was the first to call attention to this. It had been the custom to immobilize these knees in full extension, which is wrong.

In your semilunar cartilage injuries, if you have enough separation or tear to allow displacement of the cartilage sufficient to produce a persistent locking of the knee, I doubt if many of them ever heal satisfactorily by conservative treatment. A slight or partial tear, not enough to produce a persistent locking, may heal if properly reduced and immobilized for about three weeks.

Let me offer one practical suggestion in removing a semilunar cartilage, that is at the posterior attachment. If you will grasp, after it is freed in front, the front end of it and pass a tonsil snare over this, you can run it back into the posterior part of the joint and separate it without any traumatism to your joint structures whatever. But you must have a good strong snare and see to it that your wire is twisted around the piston and fastened more securely than in an ordinary tonsil operation, otherwise the wire will straighten out and will not cut through one of these heavier, tougher cartilages.

DR. J. J. ASHBY (Nashville): Dr. Penn has covered a great deal in his paper that could not be discussed fully in his twenty minutes. There is one important thing which he mentioned that I see most often undertreated or not treated. He stressed as much as he could the fact that the depression fractures of the tuberosity of the tibia should be raised to a normal level of the bone. Many of these cases are occurring from bumper injuries. When we make the first X-ray picture it is not apparent that there is very much depression of the bone, but this is due to the fact that immediately after injury there is a knock-knee deformity of the knee and the joint space appears to be about the same width on both sides of the joint. We are prone to leave those fractures with a bit of immobilization perhaps for a month or six weeks with no real attempt at restoring the upper end of the tibia to normal. At the end of that time there is a looseness of the joint, lateral motion of the joint, and a good deal of instability.

These fractures should in all cases be restored to the normal contour. Although in some of them the depression is not apparently very great, the disability is unusually great because it causes a change in the alignment of the extremity and causes a strain on the knee itself. Some of these can be corrected by manipulation of the fragments with the thumb, some of them are impacted and the impaction can be overcome by forcing the knee into a marked bowleg deformity when the pull of the ligaments will pull the fragments up; some of them can be brought together and pushed up with clamps or hammered up by placing a piece of felt over the tuberosity, then placing one hammer on that and hitting that lightly with another hammer. But in the older fractures and in some of the impacted fractures it is necessary that an open operation be done, that a chisel be passed beneath this depressed tuberosity, that the tuberosity be raised up to its normal level and new bone placed in the defect caused by the osteotomy in order to hold the position up. Weight bearing must not be allowed too early. In most cases weight bearing without some brace to keep the weight off of the injured tuberosity should not be allowed for at least three months.

DR. JARRELL PENN (closing): First I want to thank all of these gentlemen for their liberal discussion of my paper. It was with some hesitancy that I attempted to present a paper on the subject of "Internal Derangements of the Knee Joint" because I knew we would be able to only mention the various lesions occurring in the knee joint without an adequate discussion of any of them. There were two or three lantern slides that were not shown because of the limitation of time. In one of these the nontraumatic derangements of the knee joint were listed and attention was called to the loose bodies discussed by Dr. Robertson.

Time would not permit a detailed discussion of the treatment of any of these lesions and I appreciate Dr. Billington calling attention to the position of election of immobilization of certain of the ligamentous injuries.

LATE EFFECTS OF TOXEMIA OF PREGNANCY*

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INNUMERABLE REPORTS have been published in the past concerning the late effects of toxemia of pregnancy. A résumé of these investigations indicates that the recurrence of toxemia and permanent renal damage, following toxemia of pregnancy, was of comparatively rare occurrence. During the last few years, however, various observers have published important investigations which have proven both of these assumptions to be unfounded.

The investigations of Harris,[1] Young,[2] Sym,[3] Berman,[4] Gibberd,[5] and Evans[6] found the rate of recurrence of toxemia to be from twenty-three to sixty per cent. The same authors found the incidence of chronic nephritis following pre-eclampsia and eclampsia to be three and eighteen per cent, respectively. Peckham and Stout,[7] in a series of 343 cases of nonconvulsive toxemia, found the incidence of chronic nephritis to be forty per cent; many of these patients, however, had a frank nephritis before pregnancy. Rucker,[8] Teel, and Reid,[9] on the other hand, report the most common abnormal finding in eighty cases of eclampsia to be hypertension, an incidence of twenty-seven per cent. The incidence of albuminuria was eight per cent and only one case of nephritis was found. They concluded that chronic nephritis is an uncommon sequelae following eclampsia.

There is no doubt from the above investigations that the occurrence of toxemia of late pregnancy predisposes to a recurrence in a subsequent pregnancy. The recurrent rates and the rates of incidence of chronic nephritis have been differently assessed by various observers, but it must be remembered that the term "chronic nephritis" cannot have a precise definition.

Nevertheless, one cannot but be impressed by the almost universal agreement that has been reached with regard to two main clinical facts:

First, that the late toxemias of pregnancy frequently recur with subsequent pregnancies.

Second, that late toxemia of pregnancy sometimes gives rise to permanent renal damage.

This is a preliminary investigation in an attempt to learn what physical type of woman breaks down under stress of pregnancy, what pathologic changes she shows during pregnancy and particularly in the months and years following delivery.

Method of Investigation

Our object was: First, to establish data on a group of pregnant women to determine in general the percentage of recurrence of toxemia in subsequent pregnancies as a basis of discussion.

Second, to make an intensive study of a smaller group of women selected from the patients adjudged toxic by current standards in order to ascertain whether there is a temporary or permanent renal damage and what the prognosis is for the future pregnancies without jeopardizing the life of the mother.

Third, to attempt to evaluate the factors present in an individual case, which would lead one to conclude that, on the one hand, it was probable that a chronic nephritis would result or recurrent toxemia appear, or, on the other hand, that there would be no special tendency to such a complication.

In studying the late toxemias of pregnancy one is impressed by the fact that there is little agreement of opinion concerning their proper classification. In this study every case with a systolic blood pressure 140 millimeters of mercury and a diastolic pressure of ninety millimeters of mercury or over with albuminuria has been regarded as toxemia. All had many symptoms in common: headaches, visual disturbance, vertigo, hypertension, albumin, edema, and retinal changes with or without convulsions. Differentiation depends more on the severity and time of appearance of certain symptoms than on mere presence.

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*Read before the Tennessee State Medical Association, Nashville, April 12, 13, 14, 1938.

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The history of each patient has been investigated in order to ascertain the presence or absence of any previous toxemia, infection or renal involvement which may have a bearing on their future health.

An attempt, therefore, has been made to find out to what extent a woman's health has been affected by one of the late toxemias of pregnancy, and how she fares in subsequent pregnancies.

MATERIAL FOR INVESTIGATION

During the ten years under observation (January 1, 1927, to December 31, 1936) 6,957 patients were delivered on the obstetrical service of the Nashville General Hospital. Of these 328 were classified as toxemias of pregnancy, an incidence of 4.5 per cent. Two hundred thirty-eight, or 3.4 per cent, of these were cases of nonconvulsive toxemia. Ninety, or 1.2 per cent, were cases of eclampsia.

As this paper is primarily concerned with the significance of recurrent toxemia and of permanent renal damage resulting from toxemia, and inasmuch as our renal function tests are of very little value during pregnancy, many of us will agree that the only satisfactory test seems to be the behavior of the patient in a subsequent pregnancy. Therefore, we have chosen only those cases which have had a succeeding pregnancy following their first toxemia. This reduced the available number from 328 to eighty-three cases, and these have been divided into two well-known groups—nonconvulsive and convulsive toxemia. These two main groups have been divided into three subgroups based entirely on the end results.

NONCONVULSIVE TOXEMIA

Group one includes all cases who had toxemia in their succeeding pregnancies. Group two includes all cases who did not have toxemia in their succeeding pregnancies. Group three includes all cases who developed chronic nephritis in their succeeding pregnancies.

GROUP ONE—RECURRENT TOXEMIA

The cases investigated have been drawn from 238 patients who have suffered from nonconvulsive toxemia of pregnancy. Fifty of these patients returned to the hospital so it has been possible to follow them in seventy-six gestations from one to nine years after their first toxemia. Twenty-eight of these patients, or fifty-six per cent, had a recurrence of toxemia with one or more gestations which varied from mild to the most severe type. I wish to emphasize that these twenty-eight patients were free from any signs of toxemia, as far as we could detect, in the nonpregnant interval.

GROUP TWO—NO RECURRENCE

Thirteen, or twenty-six per cent, of the fifty patients had a number of subsequent normal gestations without any recurrence of toxemia. Here, then, is a group of patients who had had one toxemia of pregnancy and were not in any way predisposed to a recurrent toxemia.

GROUP THREE—CHRONIC NEPHRITIS

Nine or one in every five of the fifty patients developed chronic nephritis. In one case nephritis was detected after the first pregnancy; in three cases after the second pregnancy; in five cases after the third pregnancy. In the interval between pregnancies seventy-five per cent showed some evidence of permanent renal damage, as persistent high blood pressure, albuminuria, changes in the fundus oculi, etc. One patient in this group died one year after the last gestation.

CONVULSIVE TOXEMIA

A similar investigation was made of ninety patients who had eclampsia. Four of these died. Of the remaining eighty-six, thirty-three patients returned with a subsequent pregnancy from one to nine years after the first attack of eclampsia. Twenty-three patients had eclampsia with their first gestation, five with the second, one with the third, one with the fourth, two with the fifth, and one with the eleventh gestation.

These thirty-three patients, after the first attack of eclampsia, had forty-six gestations among them. These have been divided into three groups according to the end results: recurrent toxemia, no recurrence, and development of nephritis.

Group One—Recurrence

Of the thirty-three eclamptic patients fourteen, or 42.4 per cent, had recurrent toxemia, four had eclampsia, and ten had pre-eclamptis. All were free from any signs of toxemia in the nonpregnant interval.

Group Two—No Recurrence

Fifteen patients, or 45.4 per cent, had twenty-three normal gestations following eclampsia, with no recurrence of toxemia.

Group Three—Chronic Nephritis

Four patients, or 12.1 per cent, developed chronic nephritis. Two patients developed nephritis after the first pregnancy, one after the second, and one after the tenth.

TABLE ONE

	Pre-eclampsia		Eclampsia	
Subsequent Gestations	Number	Per Cent	Number	Per Cent
Group One Toxemia	28	56	14	42.4
Group Two Normal	13	26	15	45.4
Group Three Nephritis	9	18	4	12.1

From this investigation it is seen that the chances a toxemia will recur in a subsequent pregnancy are great—fifty-six per cent in the nonconvulsive series and 42.4 per cent in the convulsive toxemia series. The chances for the development of permanent renal damage are more striking in the nonconvulsive series than in the convulsive series, the difference being eighteen per cent and 12.1 per cent, respectively. Probably this difference can be explained by the fact that, although the toxemia of eclampsia is often severe, it is usually of short duration. This will be referred to in more detail under the discussion of the duration of the toxemia and its effects on the development of sequelae.

In the investigation of fifty cases of nonconvulsive and thirty-three cases of convulsive toxemia it is shown that a previous toxemia may affect a patient in one of three ways:

First, it may be followed by more or less habitual recurrence of the toxemia with subsequent pregnancies, with apparently good health in the nonpregnant interval.

Second, it may leave the patient entirely normal and not in any way predisposed to recurrence with subsequent pregnancies.

Third, it may sometimes give rise to an obvious nephritis.

This brings us to the third object of this paper. Is it possible to give a prognosis during the toxemic pregnancy whether the patient will be predisposed to a recurrent toxemia, chronic nephritis, or whether she will be free of any special tendency to such complications?

In searching for means of differentiating between the cases of toxemia which will be followed by permanent renal injury and those in which no sequelae occur, it seemed possible that we might gain more information by an inquiry into the patient's age, parity, duration, and severity of the toxemia, the height of the blood pressure and the presence or absence of albuminuria both on discharge from the hospital and eight weeks post partum. One would expect knowledge of these factors would be of value in foretelling which patients would develop sequelae.

In an attempt to answer these questions comparisons have been made between the toxemic pregnancies of groups one, two, and three.

COMPARISON OF AGE

	Nonconvulsive			Convulsive		
	Average Age	Youngest	Oldest	Average Age	Youngest	Oldest
Group One Recurrent	25.6	18	36	22.8	16	34
Group Two Normal	21.8	15	33	20.8	13	34
Group Three Nephritis	31.4	18	48	28.5	17	53

The age of the patient at the time of delivery shows that the mean age of the nephritic group in the nonconvulsive series exceeded by ten years the age of those who later were found to be normal. Ninety per cent of the nephritic group were over twenty-five and only two were under twenty-five years of age.

Conversely, seventy-one per cent of the

non-nephritic group were under twenty-five and only fourteen, or twenty-nine per cent, were over thirty years of age. The mean age of recurrent toxemia group exceeded by four years the age of those who did not have a recurrence.

The mean age of the nephritic group in the convulsive series exceeded by eight years the age of those who later were found to be normal. Seventy-five per cent of the nephritic group were under twenty-five years old and one was fifty-three years old. The mean age of the nephritic group exceeded by six years the age of those who developed a recurrent toxemia.

Twenty-nine or 86.5 per cent of the non-nephritic group were under twenty-six years of age and only four, or 13.5 per cent, were over thirty years old.

PARITY

What happened to these patients as they increased in parity? When investigating the parity of the patients in the nonconvulsive series it was found, as with the age, as the parity increased the chances of developing nephritis was markedly influenced. A certain strain on the organism is undoubtedly present with each pregnancy and increases as the patient grows older.

DIAGNOSIS BY PARITY
NONCONVULSIVE TOXEMIA

	Recurrent Toxemia		Normal		Nephritis		Total	
Para	No.	Per Cent	No.	Per Cent	No.	Per Cent	No.	Per Cent
2 to 3	15	53.5	10	76.9	3	33.3	28	56
4 to 6	7	25	2	15.3	4	44.4	13	26
7 to 12	6	21.4	1	7.6	2	22.2	9	18

Therefore we discover that with increasing parity there was a rise in the incidence of nephritis and a decrease of the recurrent and nonrecurrent toxemia.

DURATION OF TOXEMIA

In every instance an attempt was made to obtain an accurate history as to how early symptoms of the toxemia had persisted before delivery. It is reasonable to suppose that prolonged and severe spasm of the arterioles, as indicated by marked hypertension and heavy albuminuria of considerable duration, should produce more permanent renal damage than transient or mild toxemia. Whether a brief, severe eclampsia produces as much vascular damage as a prolonged nonconvulsive toxemia with marked hypertension for many weeks seems to be doubtful.

In the recurrent group it was found the patients had usually been under observation for some time before symptoms reappeared. Our study reveals that in only seven per cent of the recurrent group did these signs become manifest before the seventh month, while more than sixty-six per cent of the women who later showed nephritis were already abnormal when first seen. We do not know exactly when the break occurred, but we can state fairly well that in over sixty-six per cent of these abnormal signs were present before the eighth month. However, thirty-four per cent of the women who later developed nephritis showed signs only after the eighth month of pregnancy.

Analysis of the highest blood pressure during pregnancy showed that the mean systolic and diastolic readings were definitely higher in the nephritic group. In only five per cent of the non-nephritic group did the systolic pressure reach 180 millimeters of mercury or more, while that figure was attained in over seventy-five per cent of the nephritic group. However, when the blood pressure at no time exceeded 150 millimeters of mercury only two cases of nephritis developed. Furthermore a higher diastolic pressure above 120 millimeters of mercury seems to indicate a nephritis.

The location and degree of edema, headache, the degree of albuminuria and the presence or absence of casts does not, in our experience, seem to bear any relation to the prognosis.

THE HEIGHT OF THE BLOOD PRESSURE AND ALBUMINURIA ON DISCHARGE FROM THE HOSPITAL

The mean blood pressure in the nephritic group was higher than in the recurrent group, being 150 110 and 120 75, respectively. However, thirty per cent of the nephritic group left the hospital with a systolic blood pressure below 150 110 which seems to emphasize the effect of rest in bed in many cases of nephritis.

In regard to albuminuria on discharge, its presence or absence does not justify a prognosis as to the ultimate effect of the toxemic process. However, sixty-six per cent of the patients who developed nephritis had albuminuria on discharge, whereas only thirty-three per cent of groups one and two were similarily affected.

Approximately ninety per cent of the women under discussion returned to the post-partum clinic for examination six to eight weeks after delivery, at which time the blood pressure was taken and the urine examined for albumin. Seventy-eight per cent of the patients with recurrent toxemia had normal blood pressure and urine. However, twenty-two per cent showed an elevated blood pressure of 140 millimeters of mercury or over and a slight trace of albumin. In the nephritic group all showed an elevated blood pressure of 140 90 or over with evidence of albumin of more than a trace at this time.

From these investigations of the factors that may influence the ultimate prognosis in the nonconvulsive series it appears that probably the best criteria would be:

First, the duration and severity of the toxemia. The longer it persists the more likely is it to cause permanent renal damage and also to recur in a subsequent pregnancy.

Second, the degree of hypertension, together with the age and parity, may be of equal value.

This is of special interest in the management of pre-eclamptic toxemia, as many patients with this complication are brought to the hospital, kept at rest, placed on a restricted diet, and subjected to methods supposed to promote elimination. If urgent symptoms do not arise the treatment, in many instances, is persisted in until term is reached and labor occurs spontaneously. Such treatment, no doubt, results in a low maternal and fetal mortality, but in view of our investigation it seems pertinent to inquire whether we may not seriously increase the chances of permanent renal injury by allowing the pregnancy to continue too long.

However, in the convulsive series these same factors are of less value in differentiating between the cases that will develop sequelae and the cases that will not, for the reason that the duration and severity of toxemia in eclampsia is relatively short. The symptoms had persisted less than two weeks in groups one and two and six weeks in the nephritic group. And, again, eclampsia is more common in the young primipara.

All blood pressures were normal and albumin absent on discharge from the hospital and remained so six weeks post partum except the four cases that developed nephritis.

The facts indicate that the degree of involvement of the cardiovascular renal system is directly related to the interval over which it is exposed to the toxemia of an abnormal pregnancy. If renal damage is absent, and if the patient does not become pregnant, she may remain in good health, but the toxemia may recur in a future pregnancy.

Discussion

It has been shown that the recurrence of toxemia is more frequent after pre-eclampsia than eclampsia. If the two series are taken together, over fifty per cent of the subsequent pregnancies were complicated by a late toxemia.

There is no evidence that this tendency to recurrence is directly or indirectly dependent on a permanent renal damage, as most of these patients appeared healthy in the nonpregnant interval. The prognosis for a woman who has suffered from eclampsia is, as far as childbearing goes, better than that for a woman with pre-eclampsia.

Chronic nephritis was found in fifteen per cent of the cases. One in every six traced patients, who suffered from a previous toxemia of pregnancy, developed permanent renal damage. There is evidence that this is the result of the toxemia.

It seems to me the practical lesson to

be drawn from an investigation of this type is that the risk of toxemia in subsequent pregnancies is so great that all such women should be warned of the importance of placing themselves under medical supervision as soon as they suspect pregnancy. The incidence of eclampsia would be greatly reduced, the mild forms of toxemia would be discovered and dealt with earlier. A precise knowledge of the time and mode of onset of a toxemia would be invaluable in assessing the danger of continuing the pregnancy.

In adopting such an attitude it is conceivable that a great many women may be saved from developing cardiovascular renal disease at an early age with possible postponement for a great many years. Thus, we can do much to safeguard life and health by emphasizing the imperative need of antenatal care if the major risks are to be avoided. The necessity for explaining these facts is all the greater because of the rapid recovery which usually follows one attack and which often gives the patient a false sense of security. The patient who has already suffered from several toxemic pregnancies should be the object of special antenatal supervision in the event of future pregnancies.

The next point we have to consider is the advice to be given in regard to contraception. So great is the risk run by a woman with this predisposition that the matter of contraception may be considered as arising in practically all cases. Personally, I believe it should be a rule that no woman should be exposed to further risk if she has had two or more toxic pregnancies, for the risk of future recurrence increases rapidly with each succeeding pregnancy.

CONCLUSIONS

1. Fifty cases of nonconvulsive and thirty-three cases of convulsive toxemia have been followed in subsequent gestations from one to nine years.

2. Twenty-eight, or fifty-six per cent, of the patients in the nonconvulsive group developed recurrent toxemia.

3. Thirteen, or twenty-six per cent, had no ill effects following the toxemia.

4. Nine, or eighteen per cent, developed chronic nephritis.

5. In the convulsive toxemia group fourteen, or 42.4 per cent, developed recurrent toxemia.

6. Fifteen, or 45.4 per cent, had no ill effects following the toxemia.

7. Four, or 12.1 per cent, developed chronic nephritis.

8. Duration and severity of the toxemia before the birth of the child seems to be the most important factor in the development of chronic nephritis, although, the age, parity, and the degree of hypertension may be of equal importance. However, these factors play a minor role in the convulsive series.

9. Recurrent toxemia may appear in the absence of any detectable sign of renal impairment.

10. The ultimate prognosis seems to be more favorable in the convulsive group if they survive the initial toxemia.

11. All patients who have had late toxemia of pregnancy of any degree should be instructed to report for antenatal care as soon as pregnancy is suspected.

12. Long continued observation of the post-toxemic patient is necessary for an accurate classification of the toxemia, for an accurate ultimate prognosis, and for an effective guide to treatment in future pregnancies.

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DISCUSSION

DR. RICHARD McILWAINE (Knoxville): Mr. President and Fellow Members of the Society: Dr. Lewis has given us an excellent paper which represents an enormous amount of work. His paper has fully covered the subject, so I have nothing to add, but I would like to emphasize a few points he mentioned.

It is certainly interesting that only 4.5 per cent of the nearly 7,000 cases developed a toxemia of pregnancy, when he states that he considered the patient to have a toxemia if her blood pressure was systolic 140 and diastolic ninety or above, with albuminuria; and that only seventy-eight of the 328 became pregnant again. I fully agree with Dr. Lewis that these patients should be given careful instructions about contraception. It appears that he has gotten excellent cooperation for clinic cases.

He mentioned the definite relationship of the increased tendency to recurrence in direct proportion to the length of time of toxic symptoms, and that a large number do not begin showing symptoms until after the seventh month unless the patient has a pre-existing chronic nephritis, in which case, if it is very severe, pregnancy should be terminated as soon as it is diagnosed; but if the patient is at seven months gestation and the symptoms are becoming worse in spite of treatment, it is much better for both mother and baby to have the pregnancy terminated, as toxemia of pregnancy is second only to syphilis as a cause of death of the baby before the baby is born. In other words, the reason for allowing a pregnancy to continue after the patient becomes very toxic is for the benefit of the baby, but in the severely toxic patient the baby has a better chance if delivered prematurely and placed under the care of a good pediatrician. There is no doubt that it is safer for the mother to have her pregnancy terminated than it is to continue in this really toxic state, as he definitely mentioned in statistics in the series of cases that he has run right here in the Nashville General Hospital.

He stated that the attempt to learn what physical type of woman breaks down under the stress of pregnancy seems a promising line of inquiry. The patient that bothers me most is one of these short, heavy, thick-necked, fat patients who has gotten pregnant late in life for the first time and has had a history of scarlet fever early in life. With patients like that it seems to me it is safer to prevent recurrence, as Dr. Lewis has mentioned, by terminating them at seven months and turning the baby over to the pediatrician.

I enjoyed Dr. Lewis' paper very much.

DR. SAM C. COWAN (Nashville): Mr. President and Gentlemen of the Tennessee State Medical Association: Dr. Lewis always gives us a good paper and something to think about. There are only one or two points that I think need special emphasis. I am awfully glad that Dr. Lewis placed the limit of the beginning of toxemia, so far as the blood pressure is concerned, at 140 90. I think that is a most important part in the following of these cases. I do not think that ordinarily we pay enough attention to those slight elevations in the blood pressure.

Another thing that Dr. Lewis mentioned that I think you will find is absolutely true is that the renal function tests during pregnancy are of no value at all apparently. They are of no value so far as the blood chemistry is concerned, and we see a great many of these toxic patients whom we have regarded as chronic nephritis, who are in the acute phases of their toxemia, who show, so far as their renal function tests are concerned and so far as their blood chemistry is concerned, very little difference from the normal findings.

Another point that I think needs considerable emphasis is that the longer the duration of the toxemia of pregnancy before the pregnancy is terminated is something all of us should consider very seriously. In Dr. Lewis' review of these cases he has pretty definitely shown that in these so-called pre-eclamptics that have been temporized with over a long period of time for reasons of securing a baby that is well, a large percentage develop a chronic nephritis over the acute type. I think that is a very important point and one that we should give attention to. I think we make a great mistake in trying to carry these patients on account of the baby to the stage of viability. I thoroughly agree with Dr. McIllwaine that it is better to terminate these patients early and put their babies under charge of a competent pediatrician.

He also called attention to the fact that toxemia of pregnancy, next to syphilis, is responsible for the death of more babies than any other condition.

DR. W. B. ANDERSON (Nashville): Dr. Whitacre and Dr. Lewis have given us a splendid résumé of the syndrome of symptoms that go with the toxemias of pregnancy. The symptoms of the different classifications of toxemia are much the same. Stander has recently said that chronic nephritis should not be considered a classification of the toxemias of pregnancy, and Diekman says that the low reserve kidney is a misnomer. It is probably a mild chronic nephritis.

I just want to mention a few facts reiterating some of the important things brought out. First, that toxemia of pregnancy is principally a disease of young women, mainly of primiparous patients. More than half of them will be primiparas, yet one will see four times as many multiparous patients as primiparas.

Dr. Whitacre says the most important thing to have in your office is a set of scales to keep up with the weight of the patient. This is important and goes hand in hand with changes in blood pressure.

It is important, when possible, to differentiate between the pre-eclamptic toxemia and nephritis. Frequently it cannot be done until after involution. I think the character of blood pressure is our best guide if we will bear in mind a few facts. The normal blood pressure of pregnancy is low. The character of the blood pressure of pre-eclamptic toxemia is a climbing blood pressure from a normal low (around 100 systolic) to a high (around 150 to 160 systolic), while chronic nephritis carries a high blood pressure (190, 200 or more systolic). As Dr. Whitacre says, one rarely sees eclampsia with a blood pressure of 200 or over.

One other point. Hemorrhagic retinitis is pathognomonic of chronic nephritis and not seen in pre-eclamptic toxemia unless complicated with nephritis. Edema of the retina is common in toxemia, but not retinitis.

DR. M. S. LEWIS (closing): I want to thank the men for their most liberal discussion.

I do not want to leave the impression that of the 328 cases of toxemia observed in this investigation, only eighty-three became pregnant again, but that only eighty-three cases returned to us with a subsequent pregnancy. No doubt many more became pregnant again and were delivered elsewhere.

Dr. McIllwaine brought up the point that patients having toxemia previous to the eighth month of pregnancy should not be allowed to continue their pregnancy. I think this is of special interest in the management of pre-eclamptic toxemia, as many patients with the diagnosis of toxemia are admitted to the hospital, kept at rest, placed on a restricted diet, and subjected to methods supposed to promote elimination. If urgent symptoms do not arise, the treatment in many instances is persisted in until term is reached and labor occurs spontaneously. Such treatment no doubt results in a low maternal and fetal mortality, but in view of our investigations it seems pertinent to inquire whether we may not seriously increase the chances of permanent renal damage by allowing the pregnancy to continue too long.

I especially want to emphasize that since the risk of toxemia in subsequent pregnancies is so great, all such women should be warned of the importance of placing themselves under medical supervision as soon as they suspect pregnancy.

It is equally important that all toxemic patients should have long continued postnatal observation in order that we may arrive at an accurate classification of the toxemia and an accurate ultimate prognosis for an effective guide in the management of future pregnancies. This is particularly important in dealing with the mild types of toxemia, as they will often fool you.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
Devoted to the Interests of the Medical Profession of Tennessee
Office of Publication, 508 Doctors Bldg., Nashville, Tenn.

Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 15, 1932.

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H. H. SHOULDERS, M.D., Editor and Secretary

AUGUST, 1938

EDITORIAL

STATE MEDICINE

Medical care has been the subject of investigation, discussion, and agitation for a number of years.

Poverty, likewise, has been the subject of investigation, discussion, and agitation for a number of years.

Both these subjects have been interwoven with each other in much of the investigation, discussion, and agitation that has been going on.

It might be well to remember that these subjects have been the concern of all Christian religions, many philanthropies, large and small, and all the various units of government for a long time.

It is well to remember, also, that they have been fertile fields for exploitation by individuals and groups who would elevate themselves to positions of power and influence by the display of a pretended interest in one or both of these problems.

All these forces have contributed something, whether intentionally or not, to the complexity of the situation which exists in the United States today with respect to both problems.

It is very essential for those who consider the question at all to bear in mind the position occupied by the medical profession in America and that occupied by the medical profession in other countries where state medicine, social insurance, communistic medicine, etc., have been adopted.

Of first importance is the fact that there has been created in this country a medical profession adequate in numbers to serve the medical needs of all the people.

The doctors are better trained, on the average, in all respects than the profession of any other country.

The relationship of doctors to each other and the relationship they bear to the public is governed by the highest form of ethical principles that govern any other group of people of similar size on earth.

Of second importance is the fact that hospitals, adequate in numbers and with a bed capacity sufficient to meet most of the needs of the people, have been created.

A recent survey shows that a very small per cent of the population of the United States live more than thirty miles from a hospital.

Many persons and institutions are entitled to some measure of credit for these wholesome developments. Churches have made their contribution by the erection of hospitals in which the best medical practice can be delivered by doctors. Fraternal organizations have made contributions. Foundations, such, for example, as the Commonwealth Foundation, have made contributions by the erection of hospitals where there appeared to be a need and where it was possible to staff an institution. Many other institutions might be mentioned.

Hospitals are maintained by municipal governments throughout the country for the care of the indigent.

Doctors of these communities contribute their services free of charge to these indigents.

The medical profession must be credited with many efforts to accomplish, first, the greatest efficiency in doctors and, second, the observance of a high order of ethical practices. These have been accomplished in two ways.

The medical profession has sponsored legislation by the states which established boards of medical examiners to pass upon the qualification of physicians. These standards of qualification have been raised from time to time.

The medical profession has sponsored and carried forward efforts to increase the standards of medical education and the qualification of those who apply for admission to medical schools.

The medical profession adopted principles of ethics which have been observed to a degree that is extraordinary.

One provision in the principles enjoins upon members of the medical profession to give freely of their services to those unable to pay for such services. All these principles have been observed to a degree that has been applauded by many accurate observers.

The principles in the code to which doctors subscribe conform to the principles of government under which we live. They conform to the ideas of Americanism as expressed in the Declaration of Independence, viz.: "We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable rights, that among these are life, liberty, and the pursuit of happiness. That to secure these rights, governments are instituted among men, deriving their just powers from the consent of the governed."

We doctors are committed to this democratic idea, and to its preservation in the practice of medicine. We are also committed to charity even at a sacrifice.

It is inappropriate, in fact, it is highly improper, to consider the possibility of extracting a communistic form of medical practice from a communistic country, and adopting it to the conditions in a country with democratic ideas and form of government.

This question must be considered with two possibilities in mind. First, that of avoiding communistic principles in a democratic country. Second, the adoption of communism as a principle of government, not only for medicine, but for everything else. In our opinion, the adoption of communism in medicine cannot be accomplished without adopting, ultimately, the whole communistic program.

It is worth remembering that Mr. Lenin, of Russia, suggested that communism in America should be accomplished by degrees, and not by revolution.

Doubtless the problem of medical care offers a fertile field for the operation of those who seek the adoption of communism in America by degrees. This is true for several reasons. In the first place, there is a certain degree of emotionalism which can be stirred up very easily by propaganda on the question of medical care. In the second place, there are some people who do not receive adequate medical care, but we must not forget that many of them would not accept good medical care if it were offered them. They do not accept the facilities already available.

We doctors hold to the view that the freedom of the individual not only embraces the freedom to choose *his doctor*, but the freedom, also, not to consult a doctor at all if he does not want to.

So this matter of state medicine and health insurance cannot be considered simply as a *humanitarian movement promoted by those interested alone in the welfare of certain indigent groups of people.* It must be considered as a portion or segment of a picture of gigantic proportions in which our ideas of government and its form are involved.

There can be no doubt that if communistic or state medicine should be adopted in the United States the patronage attached to the offices, thus created, would be so great and the sums of money at their disposal so stupendous that patients, doctors, and the public in general would be subject to their political domination, and the adoption of a communistic government thereby accomplished *by degrees.*

P. S.—This is the first of a series of editorials on the subject of state medicine. The next editorial will deal with the forms in which it may appear.

THE FAILURE OF THE PEOPLE IN THE POOR AREAS OF THE STATE OF TENNESSEE TO RECEIVE PREVENTIVE MEDICINE PROVIDED FOR BY THE STATE

It is alleged that the people living in the poorer counties of Tennessee do not enjoy adequate health protection at the hands of the county and state governments. If such be the case it is not difficult to explain.

Some years ago when there was a commissioner of health empowered to make the policies of the state department of health the following policies were formulated and adopted:

Large appropriations were sought and obtained to supply preventive medicine to the poorer people free of charge. These funds were supplemented by federal funds and by funds from certain foundations. These funds were used, to a large extent, in establishing full-time county health units. However, they were not distributed to counties on the basis of need at all. To the contrary, the following policy was formulated and followed. The state department would establish and operate a full-time county health unit, in a county, only upon condition that the county would appropriate a certain sum of money and turn it over to the credit of the state department to be used by the state department in the operation of the county health unit. By this policy the health benefits from these funds went to the counties financially able to match them with a county appropriation. It made them not available to the very counties which needed them most—namely, those unable to match the funds.

It is readily seen that this policy of *matching funds* prevents aid from going to the areas where they are most needed, and supplies aid to areas where aid is not needed.

The only basis for the allocation of public monies to serve charitable purposes, in our opinion, should be *demonstrable need* for charity whether it be food, clothing or medical attention.

It will be noted that some of the suggestions submitted by the Interdepartmental Committee in the Conference held in Washington in July are: That large sums of money be placed to the credit of some federal agency and then be allocated by the agency to local institutions, and, in all probability, under the rules and conditions prescribed by the agency.

The policy of requiring that funds be matched enables the agency to obtain more funds from communities which can ill afford to raise them, and make the monies easily available to communities which do not need them. This alone should lead to the complete defeat of any such suggestion.

CHARITY AGENCIES, LIBERALITY, INDIGENCY

News items that are appearing daily in the public press concerning the use of charity funds to influence votes should serve to fill everyone with a fear concerning the suggestions recently made that agencies be endowed with a large sum of federal money with which to exercise domination and control over an affair so vast, so intimate, and so personal as medical care.

It seems to us that many issues of the day are confused by the use of big words. Examples of these are "economics," "sociology," "social economy," "medical economics," "demagoguery," etc.

The whole subject of charity and welfare can be treated on a very simple bread-and-butter basis.

In the first place, somebody must make the bread and butter. In the second place, those who do not make their own bread and butter, and cannot buy it, are legitimate subjects for charity. Everybody agrees to that.

When someone, who has made his bread and butter, voluntarily shares it with another who hasn't any, it is an act of charity. He is a *genuine liberal.*

When groups of people turn bread and butter over to a central agency in a community to be distributed by the agency to the needy of that community, the agency is known as a community charity. The agency is the representative of those who provide the bread and butter.

Many of the persons engaged in just such activities are endowed with the highest motives and perform their work largely out of a love for their fellow man. Nothing political ever enters. No effort is made by the giver on the one hand to influence political actions of the recipient on the other; nor does the community agency attempt to claim credit for the gift of bread and butter.

When the government establishes an agency and supplies it with large sums of money with which to supply needs to the needy, a different type of event takes place.

The agency with the force of governmental power takes the bread and butter from the one who makes it. He then takes a large, well-buttered slice of the loaf for himself, and passes the balance on to the needy. That still would not be so bad were it not for the fact that that government claims credit for the charity. Not only does he credit himself with charity, he designates himself a liberal by reason of the fact that he takes the bread and butter from those who have it and gives it to others.

In addition, according to the news items in the press, he assumes a domineering influence over those who are compelled to accept such charities.

It is difficult to imagine what would happen if an agency were established and endowed with large powers and monies with which to finance and control the matter of medical care either to the indigent or to the population as a whole.

It is our conviction that if all these subjects can be kept on a plain bread-and-butter basis the public will understand. Also the Pharisees who display a pretended interest in the poor by such acts will receive a just reward.

DEATHS

Dr. W. S. Farmer

Dr. W. S. Farmer, Nashville; Vanderbilt University, School of Medicine, 1890; aged seventy-one; died August 5.

Dr. V. D. Holloway

Dr. V. D. Holloway, Knoxville; University of Pennsylvania, School of Medicine, Philadelphia, 1907; aged fifty-four; died June 24.

RESOLUTIONS

Dr. Benjamin Edward DeLozier

On May 8, 1938, Dr. Benjamin Edward DeLozier passed on to the great beyond at the age of fifty-six years following a brief illness of pneumonia.

Dr. DeLozier was born in Sevier County, Tennessee, September 23, 1881. He taught school in Sevier County for four years. He received his medical education at the University of Tennessee and the Tennessee Medical College, from which he graduated in 1906 as president of his class. His medical education was further enhanced by postgraduate work in Loyola University, New Orleans, and at the Children's Memorial Hospital in Chicago. He did general practice, but for the past ten years he limited his practice to pediatrics.

In 1906 he began practice in Cocke County, Tennessee, later he moved to Townsend, Tennessee, and then moved to Maryville in 1920.

He served as an officer in the United States army during the World War, and has been medical officer for the 178th Field Artillery, National Guard, for the past fifteen years.

He is survived by his widow, Mrs. Zelma McMahan DeLozier; by six sons, Theodore, Hugh, Paul, Ben, Eugene, Harry; and by one daughter, Mrs. William Grubbs.

He was one of the original reorganizers of the Blount County Medical Society in 1910, and has been an active member since that time.

He was at all times known as an ethical, conscientious physician, with a character above reproach. His passing is a severe loss to the community, this society, and to this section of the state.

Therefore Be It Resolved, This society, realizing its profound loss, has caused this brief tribute to be drawn with the request that it be recorded upon the minutes of the Blount County Medical Society; and

Further, Be It Resolved, That copies be sent to his wife and family, to the local press, and to the Journal of the State Medical Association.

J. A. McCulloch,
W. C. Crowder,
J. F. Manning,
Committee.

DR. J. W. THOMAS

The death of Dr. J. W. Thomas removes from the ranks of the medical profession of Robertson County one of the most worthy and honored members. His life was beautiful in its simplicity and devotion to duty. His gentle and tender care of his patients bound them to him with a loyalty beautiful to behold.

He was in truth a chivalrous, courteous gentleman, modest and unassuming in his bearing, neat and tasteful in his dress. He went about his daily tasks scattering sunshine in the homes of sorrow and bringing comfort and ease to many a sufferer.

His life was a benediction and it is with sad hearts that we, the members of the Robertson County Medical Society, bear our testimony to the nobility of his character and the loss which we feel in the death of so valued a member. May God ever keep him we ask.

Resolved, That these resolutions be spread on the minutes of the society and that copies be sent to the county newspapers for publication and to the bereaved family.

Respectfully submitted,
C. M. BANKS,
A. R. KEMPF,
B. B. SORY,
Robertson County Medical Society.
Springfield, Tennessee, July 9, 1938.

WOMAN'S AUXILIARY

President—Mrs. H. E. Christenberry, Knoxville
President-elect—Mrs. Matt B. Murfree, Murfreesboro
Press and Publicity—Mrs. W. Frank Fessey, Nashville

DAVIDSON COUNTY

Dr. H. H. Shoulders has recently been made speaker of the House of Delegates of the American Medical Association—an honor coming to few men of the country—but justly bestowed upon him.

Dr. Shoulders, the members of the entire auxiliary congratulate you!

Florida has claimed quite a number of our members during the summer including the county president, Mrs. Joseph Travenick, with Dr. Travenick, Mrs. Arch Erwin, Mrs. W. C. Anderson, Dr. and Mrs. Fowler Hollabaugh.

Dr. and Mrs. Travenick returned by way of North Carolina, where he attended the medical section of American Life Convention held at Grove Park Inn. Included in their itinerary was a visit to son Bobby at Camp Hy-Lake.

PRESIDENT'S MESSAGE

Dear Members:

My first words must be thanks to the auxiliary for sending me to the convention. It really was a gratifying experience and I do appreciate it more than I can say.

We reached San Francisco Sunday and were pleased to find clear weather which continued throughout the convention. Even the natives seemed surprised at the absence of the usual fog.

Our board meeting on Monday morning was attended by thirty-six members, fifteen of whom were presidents. Five states east of the Mississippi were represented—Pennsylvania, New Jersey, Illinois, North Carolina, and Tennessee. Several states had representatives other than the president.

The meetings were well planned and carried out. The reports were interesting and varied. The spirit of the organization was fine. More than a thousand women were registered—585 were auxiliary members.

Mrs. Kech reported three new states organized during the past year, making a total of thirty-seven. She reported an enrollment of 20,019 members.

It was interesting to note the variety of enterprises coming under the points of the objectives in the constitution. All were worth-while projects and denoted much activity. Pennsylvania won the award for the most *Hygeia* subscriptions and Arkansas for the greatest increase in membership.

One organization made a point of "Star doctors," meaning those whose wives were members of the auxiliary. One state (Texas) had disbursed over ten thousand dollars during the year.

The Nominating Committee made up a slate of fourteen officers from thirteen states—the secretary being in the same state as the president. The vote was unanimous and the installation dignified.

We were honored to have the retiring president and the incoming president of the American Medical Association speak to us at one of our luncheon meetings. Both had kind words for the auxiliary and seemed to feel that a distinct service could be rendered in the fight against socialized medicine. Another doctor stated that in spite of terrifying statistics regarding the increase of certain dread diseases, the United States has the lowest death rate in the civilized world!

The entertainment provided was on a scale in keeping with a large city. A choice of tours in and around the town—teas and musicals, etc. A boat trip on San Francisco Bay with luncheon on Treasure Island, the new place being prepared for the World's Fair in 1939. More than 700 took this trip, which included a tour of the bay, showing both of the new bridges and close-up of Alcatraz, the federal penitentiary for criminal incorrigibles.

I did not have the pleasure of attending the open meeting of the American Medical Association, but from the newspaper reports there was a large attendance and a good spirit throughout the session.

More publicity was given "Socialized Medicine" than anything else. It is our duty and privilege to cooperate in every way to assist our husbands in the best interests of their profession, and as president of the Tennessee Auxiliary, I hereby pledge my loyalty and support.

MRS. H. E. CHRISTENBERRY.

NEWS NOTES AND COMMENTS

Dr. R. L. Dozier, Sr., and Dr. R. L. Dozier, Jr., Nashville, announce the removal of their offices to 2016 West End Avenue.

Dr. Duncan Eve, Jr., Nashville, announces his withdrawal from the Eve-Burch Clinic on September 1.

Dr. L. W. Edwards and Dr. Eve have formed a partnership and will be located in the Doctors Building until the completion of their new offices at Hayes Street and Twentieth Avenue, opposite St. Thomas Hospital.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY

The next written examination and review of case histories of group B applicants by the American Board of Obstetrics and Gynecology will be held in various cities of the United States and Canada on Saturday, November 5, 1938. Last day for applying is September 5.

For further information write Dr. Paul Titus, Secretary, 1015 Highland Bldg., Pittsburgh, Pennsylvania.

THE DOCTOR

Now in a Permanent Home

SCULPTICOLOR OF FILDES' MASTERPIECE GOES TO ROSENWALD MUSEUM

The $150,000 reproduction of the Sir Luke Fildes' masterpiece, "The Doctor," first shown by the Petrolagar Laboratories at Chicago's Century of Progress Exposition in 1933, was recently presented by its owners to the new Rosenwald Museum of Science and Industry in that city.

Following the two World's Fairs, "The Doctor" Exhibit went on a tour of 50,000 miles and was viewed by over five million people in eighteen principal cities throughout the country.

Designed to remind the public of the importance of the family physician, it required the full time of the late Chicago sculptor, John Paulding, and the noted artist, Rudolph Ingerle, and a large corps of assistants, and took nearly a year to complete. In its new location in the Rosenwald Museum it will be seen by millions of visitors annually.

AMERICAN BOARD OF INTERNAL MEDICINE, INC.

Written examinations for certification by the American Board of Internal Medicine will be held in various parts of the United States on Monday, October 17, 1938, and on Monday, February 20, 1939.

Application forms may be obtained from William S. Middleton, M.D., Secretary-Treasurer, 1301 University Avenue, Madison, Wisconsin.

The seventeenth annual scientific and clinical session of the American Congress of Physical Therapy will be held cooperatively with the twenty-second annual convention of the American Occupational Therapy Association, September 12, 13, 14, and 15, 1938, at the Palmer House, Chicago. Preceding these sessions the congress will conduct an intensive instruction seminar in physical therapy for physicians and technicians September 7, 8, 9, and 10.

Information may be obtained by addressing the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago.

MEDICAL SOCIETIES

Anderson County:

Anderson County Medical Society met on August 1 at the Anderson County Health Unit in Clinton, Tennessee. The following members were present: Doctors Ballou, Hall, Huff, Cox, and DuBard.

Upon motion Dr. George D. Schuessler and Dr. A. W. Bishop were admitted to society membership. An interesting paper on purpura was presented by Dr. Huff, after which a discussion by the society was held. Plans for the meeting of the East Tennessee Medical Association in Clinton were discussed, and additional committees were appointed to make arrangements for the entertainment of members coming to this meeting.

Horton G. DuBard,
Corresponding Secretary.

Davidson County:

The Nashville Academy of Medicine and Davidson County Medical Society, wishing to express appreciation of its distinguished member, Dr. Harrison H. Shoulders, gave a dinner in his honor at Hettie Ray's Dinner Club, Harding Road, on July 26, 1938.

In the present trying times the profession of Nashville and Tennessee feels that Dr. Shoulders is adequately prepared for the leadership accorded him by the A. M. A. The following is a clipping from the Nashville Banner of July 27, 1938.

Very truly yours,
J. P. Gilbert, M.D., *Secretary.*

Colleagues Acclaim Speaker of A. M. A. House of Delegates

"Dr. Harrison H. Shoulders, whose recent election as speaker of the House of Delegates of the American Medical Association heaped added prestige to Nashville's medical profession, was given the wholehearted acclaim and confidence of the Nashville Academy of Medicine and an eminent group of visiting physicians at a testimonial dinner held in his honor last night at the Hettie Ray Dinner Club on Harding Road.

"Among the 141 members of organized medicine who attended the dinner and paid tribute to Dr. Shoulders' career of service and achievement were many distinguished men of medicine.

"Dr. Irvin Abell, of Louisville, president of the A. M. A., and the recognized head of organized medicine in America, came here by plane to be on hand for the occasion. He was accompanied by Dr. E. L. Henderson, delegate to the A. M. A. from Kentucky and councilor to the Southern Medical Association.

"In addition to Drs. Abell and Henderson, the following paid homage to Dr. Shoulders: Dr. W. D. Haggard, past president of A. M. A.; Dr. W. B. Anderson, president of the Nashville Academy of Medicine; Dr. E. R. Zemp, past president of the Tennessee State Medical Association and now speaker of the House of Delegates for the State Association; Dr. Alfred Blalock; Dr. Thomas R. Barry, Knoxville, president of the T. S. M. A.; Dr. Charles C. Trabue, representing the younger men of the pro-

(Continued on page 330)

LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

President—Dr. Tom R. Barry, Knoxville.

Vice-President for West Tennessee—Dr. John Jackson, Dyer.

Vice-President for Middle Tennessee—Dr. W. S. Rude, Ridgetop.

Vice-President for East Tennessee—Dr. W. A. Garrott, Cleveland.

Secretary-Editor—Dr. H. H. Shoulders.

Assistant Secretary-Editor—Dr. W. M. Hardy.

TRUSTEES

Chairman and Treasurer—Dr. C. M. Hamilton, Doctors Building, Nashville.

Dr. A. F. Cooper, Goodwyn Institute Building, Memphis.

Dr. E. R. Zemp, Walnut Street, Knoxville.

Dr. Franklin B. Bogart, Medical Arts Building, Chattanooga.

Dr. George C. Williamson, Columbia.

COUNCILORS

First District—Dr. L. E. Dyer, Greeneville.

Second District—Dr. S. R. Miller, Knoxville.

Third District—Dr. Hiram A. Laws, Jr., Chattanooga.

Fourth District—Dr. J. T. Moore, Algood.

Fifth District—Dr. John W. Sutton, Petersburg.

Sixth District—Dr. H. S. Shoulders, Nashville.

Seventh District—Dr. C. D. Walton, Mt. Pleasant.

Eighth District—Dr. J. R. Thompson, Jackson.

Ninth District—Dr. E. H. Baird, Dyersburg.

Tenth District—Dr. W. B. Burns, Memphis.

Speaker of the House of Delegates—Dr. E. R. Zemp, Knoxville.

Delegates to the American Medical Association—

- Dr. E. G. Wood, Knoxville; East Tennessee.
- Dr. H. H. Shoulders, Nashville; Middle Tennessee.
- Dr. H. B. Everett, Memphis; West Tennessee.

Alternates—

- Dr. E. T. Newell, Chattanooga; East Tennessee.
- Dr. J. O. Manier, Nashville; Middle Tennessee.
- Dr. E. C. Ellett, Memphis; West Tennessee.

OFFICERS OF COUNTY MEDICAL SOCIETIES

County	President	Vice President	Secretary
Anderson	O. E. Ballou, Clinton	Geo. W. Kelly, Clinton	J. S. Hall, Clinton
Bedford	James N. Burch, Shelbyville	Price Womack, Shelbyville	W. H. Avery, Shelbyville
Blount	G. D. LeQuire, Maryville	W. C. Crowder, Maryville	J. Frank Manning, Maryville
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Carter	A. R. Collins, Watauga Valley	H. P. Damron, Elizabethton	E. T. Pearson, Elizabethton
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Cocke	J. A. P. Shields, Hartford	W. C. Ruble, Drew A. Mims, Newport	W. E. McGaha, Newport
Cumberland	E. W. Mitchell Crossville		V. L. Lewis, Crossville
Davidson	W. B. Anderson, Nashville	M .S. Lewis Nashville	J. P. Gilbert, Nashville
Dickson	Hartwell Weaver, Dickson		R. P. Beasley, Dickson
Dyer, Lake, Crockett	J. O. McKinney, Friendship	J. E. Frazier, Newburn (Dyer) J. P. Moon, Tiptonville (Lake) W. H. Stallings, Friendship (Crockett)	C. L. Denton, Dyersburg
Fayette, Hardeman	F. K. West, Rossville		Wiley D. Lewis, Bolivar
Fentress	A. H. Crouch, Forbus		C. A. Collins, Wilder
Franklin	Geo. E. Bogart, Sherwood	Henry T. Kirby-Smith, Winchester	John M. Hardy, Sewanee
Gibson	John Jackson, Dyer	Robert Morris, Medina	E. P. Bowerman, Trenton
Giles	A. W. Deane, Pulaski	G. C. Grimes, Aspen Hill	J. U. Speer, Pulaski
Greene	Hal Henard, Greeneville	R. S. Cowles, Greeneville	I. E. Phillips, Greeneville
Grundy	O. H. Clements, Palmer	Wm. A. Brewer, Monteagle U. B. Bowden, Pelham	T. F. Taylor, Monteagle
Hamblen	R. A. Purvis, Morristown	D. J. Zimmerman, Morristown	D. R. Roach, Morristown
Hamilton	A. M. Patterson, Chattanooga	S. H. Long, Chattanooga	J. Marsh Frere, Chattanooga
Hardin, Lawrence, Lewis, Perry, Wayne	J. T. Keeton, Clifton	Henry N. Moore, Savannah (Hardin) Leo Harris, Lawrenceburg (Lawrence) Paul Wiley, Hohenwald (Lewis) W. E. Turner, Lobelville (Perry) D. L. Woods, Waynesboro (Wayne)	O. H. Williams, Savannah
Haywood	R. T. Keeton, Brownsville	G. G. Mulherin, Brownsville	Roy M. Lanier, Brownsville
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Hickman	Margaretta Bowers, Wrigley	E. C. Mulliniks, Centerville	W. K. Edwards. Centerville
Jackson			E. W. Draper, Gainesboro
Knox	Robt. F. Patterson, Knoxville	R. G. Waterhouse, Knoxville	Jesse C. Hill, Knoxville
Lauderdale	Joe B. Lackey, Ripley		Jas. L. Dunavant, Ripley
Lincoln	R. T. Odom, Fayetteville	W. S. Joplin, Petersburg	R. E. McCown, Fayetteville
Loudon	J. A. Leeper, Lenoir City	J. T. Mourfield, Lenoir City	J. R. Watkins, Loudon
Macon	D. D. Houser, Lafayette		J. Y. Freeman, Lafayette
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Maury	Leon Ward, Mt. Pleasant	H. O. Anderson, Mt. Pleasant	D. B. Andrews, Columbia
McMinn	Boyd McClary, Etowah	C. O. Foree, Athens	D. F. Seay, Englewood
McNairy	E. M. Smith, Selmer	J. R. Smith, Selmer	T. N. Humphrey, Selmer
Monroe	R. C. Kimbrough, Madisonville		David M. Cowgill, Madisonville
Montgomery	M. L. Shelby, Clarksville	Philip L. Lyle, Clarksville	V. H. Griffin, Clarksville
Obion	F. B. Kimzey, Union City		D. S. Latimer, Union City
Overton	W. M. Breeding, Livingston		A. B. Qualls, Livingston
Polk	Thos. J. Hicks, Copperhill	W. Y. Gilliam, Copperhill	F. O. Geisler, Isabella
Putnam	R. L. Witherington, Cookeville	T. M. Crain, Monterey	Thurman Shipley, Cookeville
Roane	O. H. Coleman, Kingston	F. A. Neergaard, Harriman	J. C. Fly, Kingston
Robertson	W. P. Stone, Springfield	J. W. Wilkison, Springfield	W. F. Fyke, Springfield
Rutherford	John F. Cason, Murfreesboro	R. C. Van Hook, Auburntown	J. A. Scott, Murfreesboro
Scott	D. T. Chambers, Norma	T. L. Phillips, Oneida	Milford Thompson, Oneida
Sevier	R. F. Thomas, Sevierville	R. J. Ingle, Sevierville	H. A. Sauberli, Sevierville
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Sumner	C. D. Robbins, Gallatin	C. H. Donoho, Portland	W. M. Dedman, Gallatin
Tipton	A. J. Roby, Covington	J. J. Fleming, Atoka	H. C. Currie, Covington
Unicoi	H. L. Monroe, Erwin	R. H. Harvey, Erwin	J. J. Wright, Erwin
*Warren	John S. Harris, McMinnville	E. L. Mooneyham, Rock Island	John T. Mason, McMinnville
Washington	H. B. Cupp, Mountain Home	Walter Hankins, Johnson City	Carroll H. Long, Johnson City
Weakley	J. A. Moore, Sharon	M. D. Ingram, Dresden	T. B. Wingo, Martin
White	E. T. Tubb, Sparta		A. F. Richards, Sparta
Williamson	W. F. Roth, Jr., Franklin	B. T. Nolen, Franklin	K. S. Howlett, Franklin
Wilson	J. S. Campbell, Lebanon	R. N. Buchanan, Jr., Lebanon	R. B. Gaston, Lebanon

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* 1937 Officers.

COMMITTEES*

The following is a list of the standing committees of the Tennessee State Medical Association provided for in the constitution and by-laws and appointed by the proper authority, together with some special committees appointed under the authority of a resolution by the House of Delegates.

Some of the committees are appointed for a definite period. In such instances the appointment of the committeeman expires with the meeting of the House of Delegates in the year stated opposite his name.

COMMITTEE ON SCIENTIFIC WORK

Dr. H. H. Shoulders, Chairman, Nashville.
Dr. A. F. Cooper, Memphis.
Dr. Frank Harris, Chattanooga.
Dr. A. H. Lancaster, Knoxville.

STATE TUBERCULOSIS COMMITTEE

Dr. W. S. Rude, Chairman, Ridgetop.
Dr. O. N. Bryan, Nashville.
Dr. C. M. Oberschmidt, Memphis.
Dr. J. L. Hamilton, Chattanooga.

HOSPITAL COMMITTEE

Dr. D. R. Pickens, Chairman, Nashville.
Dr. E. H. Baird, Dyersburg.
Dr. E. A. Gilbert, Chattanooga.
Dr. E. G. Wood, Knoxville.
Dr. H. B. Everett, Memphis.
Dr. Lee K. Gibson, Johnson City.

COMMITTEE ON PUBLIC POLICY AND LEGISLATION

Dr. L. W. Edwards, Chairman, Nashville (1939).
Dr. E. W. Cocke, Memphis (1941).
Dr. Battle Malone, Memphis (1940).
Dr. Tom Barry, Knoxville (1938).
Dr. T. R. Ray, Shelbyville (1942).

LIAISON COMMITTEE

Dr. W. C. Dixon, Chairman, Nashville (1941).
Dr. W. P. Wood, Knoxville (1940).
Dr. Hiram A. Laws, Chattanooga (1939).
Dr. Tom Mitchell, Memphis (1938).
Dr. Tom R. Barry, Knoxville (1942).

COMMITTEE ON INSURANCE

Dr. A. F. Cooper, Chairman, Memphis.
Dr. C. M. Hamilton, Nashville.
Dr. S. R. Miller, Knoxville.

COMMITTEE ON MEDICAL DEFENSE

Dr. S. R. Miller, Chairman, Knoxville.
Dr. H. B. Everett, Memphis.
Dr. H. M. Tigert, Nashville.

ADVISORY COMMITTEE TO THE WOMAN'S AUXILIARY

Dr. B. F. Byrd, Chairman, Nashville.
Dr. Oliver Hill, Knoxville.
Dr. Percy Wood, Memphis.

COMMITTEE ON EDUCATION

Dr. J. Marsh Frere, Chairman, Chattanooga (1940).
Dr. R. B. Wood, Knoxville (1938).
Dr. D. W. Smith, Nashville (1940).
Dr. H. B. Gotten, Memphis (1938).
Dr. W. O. Baird, Henderson (1939).
Dr. J. M. Lee, Nashville (1939).

COMMITTEE ON MEMOIRS

Not filled.
Dr. H. Quigg Fletcher, Chattanooga.
Dr. E. L. Ellis, Maryville.
Dr. L. J. Lindsey, Covington.
Dr. B. T. Nolen, Franklin.

COMMITTEE ON MATERNAL WELFARE

Dr. J. R. Reinberger, Chairman, Memphis.
Dr. M. S. Lewis, Nashville.
Dr. H. P. Hewitt, Chattanooga.
Dr. Andrew Smith, Knoxville.
Dr. C. W. Friberg, Johnson City.
Dr. L. C. Harris, Lawrenceburg.
Dr. D. T. Holland, Newbern.
Dr. J. E. Powers, Jackson.

COMMITTEE ON CHILD WELFARE

Dr. W. D. Anderson, Chairman, Chattanooga.
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Dr. Frazier Binns, Nashville.
Dr. W. D. Mims, Memphis.

CANCER COMMITTEE

Dr. Ralph Monger, Chairman, Knoxville.
Dr. S. J. Sullivan, Cleveland.
Dr. Howard King, Nashville.
Dr. H. S. Shoulders, Nashville.
Dr. J. W. McClaran, Jackson.
Dr. Frank Smythe, Memphis.

COMMITTEE ON PHYSICAL THERAPY

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Dr. A. M. Patterson, Chattanooga.
Dr. Robert Patterson, Knoxville.
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COMMITTEE ON POSTGRADUATE INSTRUCTION IN OBSTETRICS

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Dr. Franklin B. Bogart, Chattanooga.
Dr. O. W. Hyman, Memphis.
Dr. John M. Lee, Nashville.
Dr. J. O. Manier, Nashville.
Dr. W. L. Williamson, Memphis.
Dr. John B. Youmans, Nashville.

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*New committeemen for vacancies due to occur have not been appointed.

fession in Nashville; Charles Cornelius, prominent attorney; Judge W. H. Swiggart; Dr. E. G. Wood, Knoxville, delegate to the A. M. A. and distinguished surgeon; Dr. H. B. Everett, Memphis, delegate to the A. M. A.; and Dr. George Williamson, past president of the T. S. M. A.

"Dr. Abell, making the principal speech, lauded Dr. Shoulders for his efficient work in the A. M. A. and later presented in detail a lucid description of the problems confronting organized medicine at the present time. Dr. Haggard, in presenting Dr. Abell, said he was a 'man who embodies all the attributes we love and cherish, a man who has made surgery a part of his life.' 'We could not have chosen a better man to lead us,' he added, 'and I am happy to present to you at this time a surgeon, scientist, statesman, Dr. Irvin Abell.'

"The A. M. A. president congratulated the Nashville academy on having one of its members in the important position of speaker of the House of Delegates. He told the group that this was the only body that could pass on the policies of the A. M. A. and that this body would 'meet face to face with the problems which are now before us.' Dr. Abell, speaking as an individual and not as president of the A. M. A., because he has no authority to cite the policies of that organization unless authorized to do so by the House of Delegates, gave the background of the recently proposed federal government health program.

"Dr. Abell questioned the accuracy of the national health survey made in 1935 and 1936, because he said it was not 'an all-inclusive one,' and in some cases was 'not confirmed by the diagnosis of physicians.' 'The fact that the survey was made on this basis leads me to doubt the conclusions reached,' he said. An interdepartmental committee of the federal government, after going over the results of the survey, appointed a medical committee to make a survey, which, Dr. Abell said, also reached many deductions which are doubtful.

"Dr. Abell enumerated several points in the proposed program and commented on them. Summing up the entire situation, he said: 'We're for all these things, but the point of difference comes in the method of application. I think I shall wait until I see how they dispense with the program before commenting further.' He pointed out that the proposals should be studied much more and that the problems of reaching proper distribution of the proposed governmental hospital facilities and how the tremendous amount of money was to be integrated within the existing medical service were great ones. Dr. Abell said that the medical profession is brought face to face with the problems in the project, that it challenged their attention, and that they should give it a careful and thorough study and present their views. He concluded by stating that he personally thought that organized medicine should say in the end whether they accepted or rejected this proposal.

"Dr. W. B. Anderson, speaking for the Nashville Academy of Medicine, said, at the opening of the meeting: 'This meeting is a great honor and a just one to Dr. Harrison H. Shoulders, to whom we are much endeared and of whom we are all proud.'

"Dr. H. M. Tigert, of Nashville, served as toastmaster, acknowledged the distinguished visitors, introduced the speakers and read messages of congratulations from absent members of the profession. The various speakers lauded Dr. Shoulders as 'standing in the front rank of organized medicine.' He was declared one 'who will hold our banner high and defend our profession.' 'He has challenged the admiration of the entire medical profession,' one speaker said. Dr. Shoulders' election to the speakership of the A. M. A.'s House of Delegates was looked upon by the physicians present not as an accident, but as a reward for qualification and ability. Dr. Trabue, speaking for the younger physicians, said: 'We younger doctors stand behind you, Dr. Shoulders, in the fight to keep the control of medical practice within the ranks of medicine.'

"Mr. Cornelius credited Dr. Shoulders with standing for 'common everyday honesty and service for others,' two cardinal qualities essential to a successful man, he stated. Mr. Cornelius said he considered it an honor to talk to men for whom he had such a reverence and for whose profession he had an even greater reverence. Dr. E. G. Wood said of Shoulders, 'as he has done before he shall continue to do honor to organized medicine and to the speakership of the A. M. A.'

"Near the end of the meeting Dr. W. C. Dixon, speaking for the Nashville profession, presented Dr. Shoulders with a gavel, which 'was cut from a hickory tree from the home of Andrew Jackson and to be used in presiding over the House of Delegates.' It was emblematic of the confidence with which the Academy of Medicine held Dr. Shoulders.

"Presenting Dr. Shoulders, who made the final speech of the evening, Dr. Tigert, the toastmaster, said that 'nature with a lavish hand has bestowed more than the usual number of talents and virtues on Dr. Shoulders,' and that 'he is a writer, speaker, philosopher, medical statesman, an excellent surgeon, and, above all, a prince among men.'

"Dr. Shoulders told the group that they had accorded him the greatest honor he could ever attain, the greatest thing a mortal could aspire to—'the confidence of my fellow men in the medical profession.' 'I shall ever count this occasion as the highest honor that ever has or ever will come to me,' he said. Dr. Shoulders pledged himself to uphold the policies of organized medicine and stated:

" 'Doubtless most of you learned, as I did, at your mother's knee the story of the Pharisees as told in the Bible. The Pharisees of today have with remarkable accuracy retained the characteristics they had more than eighteen hundred years ago.

" 'Unfortunately their number seems to have increased out of all proportion to the better elements in the population. Their prevalence now compares to some extent with the locust which plagued the people of the Holy Land.

" 'I fear we do not recognize them and expose them as well now as they did then. The great Physician diagnosed them readily with remarkable accuracy and unhesitatingly condemned the whole tribe of them.

" 'The genuineness of the interest of the medical profession in the indigent sick has been demonstrated in the only way a genuine interest is ever shown, by service and sacrifice, not by words.

" 'No Pharisee, however brilliant, however well disguised his motives, however powerful his political position at the moment, can take from us the credit for that homely virtue.'

"In conclusion, expressing his heartfelt appreciation for the tribute heaped upon him, Dr. Shoulders said:

" 'From the depths of a profound emotion of gratitude, I thank you all.' "

Greene County:

The Greene County Medical Society met Tuesday, July 12, at Greeneville.

Dr. Paul H. Ringer, of Asheville, North Carolina, addressed the society on "The Early Diagnosis and Treatment of Tuberculosis."

Dr. J. B. Naive, of Knoxville, director of the Beverly Hills Sanatorium, addressed the society on "The Part Played by Institutional Care in a Tuberculosis Control Program."

The Greene County Medical Society met at the Andrew Johnson Clubhouse on Tuesday, August 2, 1938.

Dr. L. E. Dyer presented a paper on "Tuberculous Peritonitis." Dr. R. B. Gibson discussed this paper.

Mr. Patrick, of Nashville, discussed the objectives of the Farm Security Administration, particularly as it has to do with medical care.

Discussion developed the fact that their proposition is essentially a "heads-you-win-tails-I-lose proposition" in which the physician is assumed to be willing to start off with no expectation of being paid in full, and, should a surplus remain from allotted funds, he must expect the government to retain that.

The society voted adjournment without taking any local action on the proposals of this, one of many federal schemes.

I. E. PHILLIPS, *Secretary*.

Hamilton County:

August 4—"Diarrhea in Children," by Dr. H. J. Starr.

"Diagnosis and Treatment of the More Common Skin Conditions in Children," by Dr. J. W. Hocker.

Hardin, Lawrence, Lewis, Perry, and Wayne Counties:

The Five-County Medical Society met in Clifton, July 26, at the Riverside Hotel.

The following papers were read:

"Public Health Aspects of Typhoid Fever," by Dr. L. D. Farragut, Savannah.

"Some Practical Points in Diagnosis of the Acute Surgical Abdomen," by Chas. F. Webb, Jackson.

"Pelvic Infections," by Dr. John E. Powers, Jackson.

"Diagnosis of Surgical Diseases of the Rectum with Special Reference to Cancer," with lantern slides, by Dr. W. D. Haggard, Nashville.

Robertson County:

MEDICAL SOCIETY IS ENTERTAINED

Dr. B. B. Sory, Sr., entertained the Robertson County Medical Society at a barbecue supper Tuesday evening at his home in Cedar Hill. Those attending were Drs. W. P. Stone, W. B. Dye, A. R. Kempf, J. E. Wilkison, C. M. Banks, J. S. Freeman, W. W. Porter, R. D. Moore, W. F. Fyke, J. S. Hawkins, E. W. Adair, L. F. Sory, J. R. Connell.

Dr. J. R. Sory, of West Palm Beach, Florida, and Dr. Curtis Sory, of Fort Lauderdale, Florida, sons of the host, were guests of honor.

Following the program a scientific program was taken up, and in addition a committee submitted resolutions pertaining to the recent passing of Dr. J. W. Thomas, of Cross Plains. The resolutions were adopted.

Shelby County:

August 2—Case Report: "Head Injuries," by Dr. J. D. Biles, Jr. "Dextrocardia in Brothers," by Dr. N. S. Stern.

Papers: "The Nuisance Patient," by Dr. J. H. Lipsey. Discussed by Drs. H. B. Gotten and Jacob Alperin.

"The Present-Day Conception of Peptic Ulcer," by Dr. E. G. Campbell. Discussed by Drs. E. D. Mitchell, Jr., and J. A. McIntosh.

Washington County:

July 7—"Hypertrophy of the Prostate," by Dr. C. W. Brabson. Discussed by Drs. Matthews and West.

"Backache," by Dr. J. L. Hankins. Discussed by Drs. Walter Hankins and Walker.

August 4—"Splenectomy Illustrated," by Dr. G. J. Budd. Discussed by Drs. Creech and Parker.

"Vital Statistics as Applied to General Medicine," by Dr. E. E. Carrier. Discussed by Drs. Bevis and Poole.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By HUGH BARR, M.D.
Medical Arts Building, Nashville

Fatal Toxic Reactions Associated with Tribromethanol Anesthesia. H. K. Beecher, Journal of American Medical Association, July 9, 1938.

This study is based on 3,934 cases in which avertin with amylene hydrate was used and eight reasons are given for its decline in popularity. They are as follows: Variability of response, rectal irritation, prolonged induction with inhalation anesthesia, alarming immediate depression, delayed effects, contraindications such as hepatic, circulatory and renal disease, impossibility of removing it after toxic effects are manifest, and lastly fatalities.

Seven deaths were recorded, six showed immediate depression, and one collapsed after a short operation. If four of these deaths could be eliminated due to recent knowledge of contraindications there would be a death rate of one in 1,200. The action of avertin amylene hydrate is similar to chloroform toxicity on the liver and kidneys which was proved by autopsy.

INTERNAL MEDICINE

By R. B. WOOD, M.D.
By D. R. THOMAS, M.D.
Medical Arts Building, Knoxville

On Mistaking Other Diseases for Acute Coronary Thrombosis. James B. Herrick, Chicago, Illinois, Annals of Internal Medicine, June, 1938.

The author emphasizes the warning that the danger of confusing acute coronary thrombosis with such entities as ptomaine poisoning, acute indigestion, acute dilatation of the heart, acute heart failure, cerebral hemorrhage or thrombosis, perforating peptic ulcer, pancreatitis, gall-bladder disease or any falling under the so-called "acute abdomen." He considers the need of warning greater especially since acute coronary obstruction may occur in relatively young individuals; and that its onset may be less startling and frank than first described. Only critical study often avoids a major diagnostic error, which may be the cause of fatal results. Likewise, there has developed a tendency to call other diseases coronary occlusion —with equally serious results often from error in diagnosis. This latter tendency is the subject of the paper.

Since thrombosis is often the culminating incident in angina pectoris, they are often confused. However, it is worth while to distinguish between the effort pain relieved by nitrites and quiet and the enduring pain coming on without effort and associated with shock, dyspnoea, arrhythmia, fever, leucocytosis, and electrocardiographic changes.

Cardiac irregularities as extra systoles, auricular fibrillation or flutter, or paroxysmal tachycardia may be taken for a coronary accident, especially in the neurotic. It may take careful study to eliminate positive signs of an acutely damaged heart.

Frank cases of neurocirculatory asthenia are usually easily recognized. In others of neurotic nature diagnosis may be different.

Malingerers may feign coronary accidents to claim health insurance. Insurance companies may be suspicious of fraud and be proven wrong. In either case, the keenest diagnostic acumen may be necessary to clinch the diagnosis.

Pericarditis caused by infection may be symptoms, and even its electrocardiogram closely resemble the aseptic pericarditis that accompanies infarction. Here careful study is most important as prognosis and treatment depend on the underlying pathology.

Aortic disease causing pain and distressed breathing with changes in cardiac action due to syphilitic aortitis with or without aneurysm may be interpreted as occlusions. In the nonsyphilitic dissecting aneurysm and in its rupture into the pericardial sac the pain and shock may greatly simulate coronary occlusion.

Pulmonary conditions which may be easily confused are pleurisy, pneumonia, massive collapse of the lung, carcinoma of the bronchus, acute pneumothorax, embolus or thrombus in the pulmonary artery and volumes of discussion might be written on the differentiation.

Herpes zoster has three times been seen by the author called acute coronary thrombosis.

Arthritis with its costochondral changes and intervertebral changes may be interpreted as angina or coronary in nature. He cites a case of fractured vertebra treated as coronary disease.

Abdominal disease may simulate a cardiac accident. Such conditions as gallstones, peptic ulcer, carcinoma, pancreatitis, acute gastritis, spastic colon with acute manifestations, diaphragmatic hernia, and gastric crises of tabes may all be confused with acute coronary obstruction.

Diabetic coma coming on may closely simulate a coronary attack. Coronary attacks are not unusual in diabetics. It is also not unusual to find sugar in the urine of a patient who has had a coronary occlusion.

The author concludes that many other diseases are mistaken for coronary disease, that our most embarrassing and costly errors are due to forgetting for the moment the things we know full well, that in looking for the unusual, we overlook the obvious. He presents it all, not as anything new, but with an emphasis on "lest we forget."

OBSTETRICS AND GYNECOLOGY

By Hamilton V. Gayden, M.D.
Suite 234 Doctors Building, Nashville

Elderly Primiparae. Cloyce R. Tew and K. Kuder, American Journal of Obstetrics and Gynecology, 35: 773, May, 1938.

The authors present an unprejudiced report of 240 cases of obstetrical cases thirty-five years and over. Tables are presented showing complications of pregnancy and labor. The mortality rate uncorrected in the elderly primiparae was 1.25 per cent in contrast to 0.2 per cent in the clinic control. The causes of death in the three cases were cardiac disease, acute yellow atrophy, and peritonitis following Cesarean section.

The following are conclusions made from this report:

The incidence of elderly primiparae was 2.01 per cent in a series of 11,919 obstetric patients.

There is an increased incidence, among elderly primiparae, of toxemia of pregnancy, placenta previa, and myoma uteri.

Although there is no marked difference in the total incidence of all types of contracted pelves in this group of women, funnel pelves are definitely more predominant than among younger primiparae. Among the complications of labor in elderly primiparae, we note an increased incidence of occipitoposterior positions, arrested transverse positions, and post-partum hemorrhage.

The operative delivery incidence is greatly increased in the elderly primiparae, being double that of the clinic population. Maternal mortality is definitely higher in the elderly primiparae group than in the total clinic group of patients.

Infantile mortality, which includes premature, full-term and neonatal deaths, is markedly elevated in elderly primiparae, being almost three times that of the clinic population.

The elderly primiparae does not seem to be able to undergo operative procedures at delivery with as good results to herself as does the younger woman as shown by the complications of the puerperium.

"Elderly primipara," per se, does not constitute an indication for Cesarean section, unless there is an accompanying complication, which still further adds to the risk to the offspring.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Anomalies of the Lacrimal Passages and Their Structural Genesis. Franz Fischer, American Journal of Ophthalmology, July, 1938.

Textbook explanations of this subject are for the most part based on older embryologic knowledge. The extensive work of Speciale Cirincione is usually ignored. Fischer has, therefore, collected from the literature all descriptions of lacrimal-passage malformations, and he interprets the findings systematically with due consideration of the newer knowledge of the development of these structures. The anomalies of the canaliculi include: (a) Membranous atresia of the canaliculi. A normal canaliculus has origin in a normal puncture, but is occluded by a superficial membrane or by a plug of cells near its origin. A sound can easily be passed and soon reaches a normal canaliculus. (b) Absence of lacrimal puncta and canaliculi. No punctum can be found, and on cutting through the skin one finds no canal at all or only a rudimentary strand of epithelial tissue. Attempts to incise the region of the caruncle and to introduce a permanent sound in the hope that it will become surrounded by epithelium have been fruitless. (c) Atresia of punctum and canaliculus. This anomaly has been reported only twice, and is easily explained by reference to the fact that canaliculi begin as solid structures in the embryo and subsequently become canalized. (d) Reduplication of a canaliculus has been reported. It must be distinguished from double punctum with single canaliculus. (e) Three puncta with one canaliculus have been reported and also triple canaliculus. (f) Quadruple lower punctum has been reported once. Development of multiple puncta was formerly explained as abnormal budding from the epithelial mass which had separated from the superficial ectoderm. It is now known that the canaliculi begin by proliferation of the superficial ectoderm into the deeper tissues. (g) In trough-like canaliculus the ductlet appears as though slit. The groove develops by destruction of cells in a manner analogous to formation of the punctum.

Anomalies observed in the tear sac are: absence of the sac, reduplication, diverticulum, and congenital fistula. The common anomaly in the region of the nasolacrimal duct is atresia of its lower end, from failure of the stratum of epithelium which separates the nasolacrimal duct from the lateral nasal diverticulum to disappear at the end of the fetal period.

PEDIATRICS

By John M. Lee, M.D.
Doctors Building, Nashville

Allergy in Childhood—Eleven Prophylaxis. Bret Ratner, M.D., New York, The Journal of Pediatrics, June, 1938.

Any patient may develop allergy at any age, but it is most likely to develop in the antenatal period, early childhood, and during illness and convalescence. The sensitizing antigen may enter the blood stream of the fetus through the placenta or proteins may enter the blood stream of the child through the walls of the intestine. From the manner in which sensitization is acquired, it is believed that its incidence may be reduced by certain prophylactic measures.

The fetus may become sensitized by an excessive intake of any item of diet by the parturient mother. This may be the result of an abnormal craving for a food that accompanies the pregnancy. The excessive indulgence may be continuous over a long period or limited to an occasional food debauch. Sensitization is particularly likely to result from food indiscretions in the latter months of pregnancy. To avoid intra-uterine sensitization the mother should take during pregnancy a widely varied diet, avoid overeating, avoid overindulgence in any single protein food, and take a portion of her food in allergenically-denatured form. Some foods are allergenically-denatured by cooking, such as milk, egg, wheat and other cereals, and malt or corn sugar. Heating may not sufficiently denature some foods and these may have to be omitted from the diet during pregnancy.

In the neonatal period raw or dry milk may result in sensitization and at this age if relief or complementary feeding is employed well boiled milk and preferably a denatured form of sugar is best.

Following severe gastrointestinal disturbances, patients have shown allergic symptoms from foods previously completely tolerated. This resulted from entrance into the blood of unchanged protein through an intestinal wall made more permeable as a result of the diarrhea. Hence, it is advised that in severe diarrhea, dysentery, and typhoid fever, we prescribe a varied diet, no new foods, and allergenically-denatured foods. The same precautions should be observed in the convalescent period following the above illnesses, surgical operations, and other types of sickness.

Sensitization may occur from any of the common foods taken by the child in excessive quantities, milk, egg, and wheat being the chief offenders, also seasonal foods taken at infrequent intervals such as berries, seasonal fruits, nuts, shell foods, and vegetables. The practice of overfeeding infants and the introduction of many new foods in infancy fall into this category.

The author also discusses in this article the prevention of sensitization to dust, drugs, bacteria, and horse serum.

ROENTGENOLOGY

By **Franklin B. Bogart, M.D.**
Medical Arts Building, Chattanooga

Roentgen Therapy in Angina Pectoris—Report of Sixty-five Cases. Milton G. Wasch, M.D., and Samuel George Schenck, M.D., Am. J. R. and R. T., Vol. 39, No. 4, p. 585, April, 1938.

The treatment of angina pectoris was entirely medical for almost a century and a half after the description of the medical entity by Heberden in 1772. Roentgen ray was first successfully used to relieve pain by Beeck and Hirsch in 1916. Since 1920 numerous surgeons have used resection or alcoholic blocking of the sympathetic chain supplying the precardial region.

The authors had referred seventy-eight cases for roentgen therapy, sixty-five of whom are reported. The other cases were eliminated because they did not complete the treatment or it was impossible to follow them. All of the cases had pain sufficiently severe to be incapacitating and had not responded to other forms of medical treatment. Patients with recent coronary occlusion, those with evident cardiac decompensation and syphilitics, were not included in the series. Fifty-seven of the cases were males and eight females. The following results were obtained:

Marked improvement, ten cases, 15.4 per cent; moderate improvement, nineteen cases, 29.2 per cent; slight improvement, fifteen cases, 23.1 per cent; unimproved, twenty-one cases, 32.3 per cent.

No case showed increase or aggravation of the symptoms. Three deaths that have subsequently occurred in the series were as follows: One from congestive heart failure one year after completion of the series of X-ray treatments, and two from typical symptoms of coronary occlusion, one and two years respectively, subsequent to therapy.

In the ten cases showing marked improvement most had been unable to walk without precordial pain. Subsequent to treatment improvement was so marked that they were all able to walk six to eight blocks without pain and some returned to work. The period of improvement usually lasted six to eight weeks, when it was necessary to repeat the series. Improvement usually occurred about ten days after the completion of the treatment. Many cases were observed over a period of two to three years, and the results were surprisingly constant.

The authors have the impression that cases of the angiospastic type give much better results than those with advanced anteriosclerosis or coronary occlusion.

The technique consisted of one large portal over the lower two cervical and upper six dorsal segments including the paravertebral site. This area received 150 r (measured in air) every other day until four such treatments had been given. The following factors were used: 200 kilovolts, four milliampere, 37.5 centimeters distance, 0.5 millimeter copper, and one millimeter aluminum filtration. In refractory cases a second series of treatments was given the following month. The number of such treatments varied from four to forty-eight, the average being sixteen.

SURGERY—GENERAL AND ABDOMINAL

By **Battle Malone, II, M.D.**
1400 Monroe Avenue, Memphis

Notes on Differential Diagnosis of Carcinoma of the Stomach. Sara M. Jordan, M.D., Surgical Clinics of North America, June, 1938.

"The most important factors in the early diagnosis of carcinoma of the stomach are the early detection of any organic diseases of the stomach, the proof that such disease is benign, or with a reasonable suspicion of malignancy, the earliest possible surgery with histologic diagnosis." In uncomplicated cases the history, physical examination, chemical and roentgenological data definitely indicate organic disease, but there may be an apparently benign ulcer or a functional disturbance to obscure the picture. A well-developed carcinoma may be disguised by seemingly unimportant symptoms. Any change of symptoms in an old history should be regarded with suspicion.

Achlorhydria is said to indicate carcinoma, while hyperchlorhydria points to ulcer, but some cases of carcinoma show normal or high free acid. However, any change from normal acidity to hypo or anacidity in an ulcer case is suspicious of malignant degeneration. Persistent occult blood in stools is a reliable indication of open ulceration and is corroboratory evidence if carcinoma is suspected.

Radiography in which most reliance is placed may be very confusing. Newer radiographic methods have increased its efficiency in diagnosis. Pressure technic under fluoroscopy and spot films may detect small lesions anywhere. With a small amount of barium in the stomach observation of the rugae fluoroscopically will sometimes reveal a small crater which would be otherwise overlooked. Finer points in differentiating carcinoma and ulcer radiologically are brought out. Adhesions may cause a distortion of the picture with the full barium meal. The hourglass deformity seen for the first time after the healing of an ulcer may simulate an annular constriction due to carcinoma. Peristoltic waves seen fluoroscopically passing through the isthmus indicate the true nature of the condition.

Defects caused by spasm are a serious source of confusion. The use of antispasmodic drugs and a period of rest may cause the spasm to disappear. However, occasionally an exploratory operation is necessary to clear up the diagnosis. Gastroscopy is a valuable aid in early detection of organic lesions.

The size of the lesion is thought to have no diagnostic value as a criterion. The location of the lesion is of importance in that all lesions of the greater curvature are malignant; most ulcers occur in the media of the lesser curvature and most carcinomas in the distal third. If after the above-mentioned methods of diagnosis have been used the nature of the lesion is still doubtful, trial management with careful treatment and careful follow-up of symptoms and laboratory findings will reveal one of two things: either an intractable ulcer or a malignant lesion, both of which justify radical surgery.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.
By G. A. Williamson, Jr., M.D
Medical Building, Knoxville

The Future of the Unilaterally Nephrectomized Patient. Clyde Leroy Deming, Journal of Urology, July, 1938.

The author discussed 180 cases in which nephrectomies have been performed during the past fifteen years. The series is divided into seven groups: first, lithiasis; second, tuberculosis; third, tumors; fourth, pyelonephritis and pyonephrosis; five, hydronephrosis; sixth, trauma; and seventh, hypoplasia. There were seven operative deaths, a mortality of 3.9 per cent. The percentage of nephrectomies done during the first decade of life was 21.1 per cent. Fifty-four per cent of the 180 cases were male, forty-six per cent female.

There were thirty-nine cases with lithiasis, the youngest being thirteen and the oldest sixty-eight years. Eight had stones removed from the remaining kidney. An infection in the remaining kidney remains in fifty per cent of these cases with a fair function, the other fifty per cent having no infection and a normal function.

There were thirty-six cases with renal tuberculosis, the youngest being nine, and the oldest seventy-nine years of age. Of the twenty-three living eighteen are well, while five still have bladder symptoms. Ten are dead, three of these living over five years. Three are untraced.

There were thirty-five cases with renal tumors, eleven of these being adenocarcinoma, five of which are living. There were ten with hypernephroma with seven living, seven with papilloma of the renal pelvis, of which five are still living. There were two with Wilms tumor, both of which are living. One patient with a myxosarcoma is alive, and the remaining four with other types of tumors are dead.

The cases of pyelonephritis were thirty-two in number, the youngest being three and the oldest seventy-six years of age. Five of these were children, all of which have a normal renal function, and are developing normally. An aged patient died of renal infection in the remaining kidney three years after nephrectomy. The remaining number are living, five of which have moderate infection in the remaining kidney.

There were twenty-six patients with hydronephrotic kidneys, ranging in age from four to sixty-six years, all of which are living and well, as are eight with trauma and four with hypoplasia.

In his discussion the author states the life expectancy in the tuberculous cases depends largely on the extent of the extrarenal involvement. The pyogenic group, provided the remaining kidney is kept free of infection, has a good life expectancy as do the traumatic and hypoplastic groups. Pregnancy is permitted for all those healthy individuals who have not had a malignancy.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE
ISSUED MONTHLY, Under Direction of the Trustees

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OFFICE OF PUBLICATION, 508 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXXI September, 1938 No. 9

PERFORATION OF THE INTESTINES*

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PERFORATIONS of the intestines are of an extremely serious nature and demand prompt and energetic treatment. There is no lesion where the "fleeting moments" count so much and where the "sickle of the grim reaper" is waved so vigorously and energetically against us mortals. Occasionally the perforative process progresses slowly through the walls of the bowel, giving the protective mechanisms of nature a chance to act in successfully blocking the egress of the intestinal contents so that a general peritonitis is prevented. In most cases, however, the outpouring from the intestinal tube is too rapid to be cared for by nature's reactions, so general peritonitis ensues and a face-to-face meeting with the Maker takes place.

In accidents where the abdominal wall is penetrated, whether it be by knife or missile, the seriousness of the case is readily appreciated and prompt exploration is generally performed. It is in other types of accidents, whether they be from within or without, where there is no avulsion of the abdominal parietes that perforation is most generally overlooked, and it is in these cases that I will detail more fully. I am excluding entirely in this paper consideration of the stomach and adjacent part of the duodenum, for this part of the digestive tract is a full subject within itself.

Violence will account for a great many more intestinal perforations than will disease. With the marked improvement in preventive medicine and therapeutic advancement, the disease entities are diminishing, whereas, because of the changes in our civilized life, traumatic causes are on the increase. Forty years ago, when the horse and mule were in their heyday, it was not uncommon to have a perforated intestine resulting from a kick from one of these beasts of burden, but today it is rare. Today the automobile causes many more perforations than these animals ever did. Also men used to settle personal altercations with their fists, but this only rarely caused perforation. Today these grievances are settled with knives and guns, giving us our most frequent cause for perforation. Modern industry also brings in its causes. Numerous cases are cited where a worker played a practical joke on his fellow by placing a compressed air gun against the seat of his trousers and pulled the trigger. The compressed air overfilled the bowel, and a fatal accident resulted much to the amazement and sorrow of the joker. Today perforated intestines from typhoid fever, so well known to the past generation of physicians, is unknown to most of the present generation and has been seen by few.

Perforations of the intestines are sometimes seen and not recognized. The symptoms of large sudden perforations with rapid spreading peritonitis are clear enough, but in the slower-forming perforations where nature walls off the process with only a local area of peritoneal irritation the symptoms may be so mild as to go undetected. In fact, many intra-abdominal abscesses, resulting from a perforation, are opened and drained without detecting the etiology. The patient recovers and the cause of the abscess is never discovered. At times the true cause is not revealed until the patient comes to autopsy. Such was the case in an eight-year-old child who was thought to be suffering from general peritonitis resulting from a ruptured appendix. The history did state that the child fell from a tricycle and was struck in the abdomen by the handle bar. Since the symptoms simulated appendicitis, the traumatic feature of the history was not properly evaluated. Operation was not undertaken because of the critical condition of the patient. Necropsy disclosed a perforation of the terminal ileum.

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*Read before the Tennessee State Medical Association, Nashville, April 12, 13, 14, 1938.

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In traumatic cases perforation is most commonly overlooked where blunt force is the causative factor. In this instance there may be no detectable evidence of injury to the abdominal wall and the severity of the catastrophe may not manifest itself until later. The severity of the damage to the abdominal wall is no indication of the severity of the injury to the underlying structures. This type of injury, unlike penetrating wounds, does not usually cause multiple perforations of the intestine, but only single lacerations with involvement of the mesentery. Large blood vessels in the mesentery may be torn and a fatal hemorrhage rapidly occur before the patient can be operated upon. The mechanism by which this accident takes place is threefold: first, the soft intestinal structure is crushed against some hard structure as the bones of the vertebra or the bones of the pelvis; second, the force is applied obliquely and the gut is injured due to a tearing action; and third, due to an increased intra-intestinal pressure when the gut is suddenly compressed, it bursts as a balloon would do under similar circumstances. According to Geill, the frequency with which the intra-abdominal organs are injured is as follows: liver, spleen, kidneys, intestines (11.1 per cent), stomach, bladder, and pancreas. According to Curtis, the relative frequency of rupture of the intestinal tract in 113 studied cases is: duodenum six, jejunum forty-four, ileum thirty-eight, other parts of the small intestine twenty-one, and large gut four. The jejunum is most often injured within the first three feet and the ileum within the last three feet. In rupture resulting from intra-abdominal disease the rapidity with which the perforation takes place depends upon the nature of the pathological process. In cases of typhoid fever, for instance, the patient suddenly has marked abdominal pain, develops a board-like rigidity of the abdominal wall, and there is no doubt as to what has taken place. In diverticulitis of the colon the process is often a little slower in its progress, giving the natural defenses time to participate and wall off the damaged area, allowing the formation of an abscess. In cholelithiasis the perforative process may be even slower, but progressive. The calculus erodes its way through the gall-bladder wall. The peritoneal surface of the intestine becomes adherent to this area and the formation of many adhesions takes place so that in due time quite a large protective barrier is formed. The calculus continues on its journey until eventually it enters the lumen of the intestine. Then it may pass along spontaneously or cause an intestinal obstruction or enter the free peritoneal cavity. I have seen these adhesive masses in the gall-bladder region so large, firm, and hard as to warrant a diagnosis of carcinoma.

In perusing the literature on this subject for the past thirty-seven years I have encountered some interesting causes for these perforations. Some are common and frequently seen, others are rare and almost unbelievable. The following are some of the causes that have been noted:

1. Trauma to the abdomen from without:
    (1) Automobile accidents

  - (2) Kicks by hoofed animals (horses and mules)
  - (3) Kicks by humans
  - (4) Blows by human fists
  - (5) Handle of handcar
  - (6) Trauma of existing hernia
  - (7) Gunshot
  - (8) Knives
  - (9) Ice picks
2. Foreign bodies ingested:
  - (1) Fishbone
  - (2) Bird bone
  - (3) Steel needle
  - (4) Pine needle
3. Diseases of the intestinal tract:
  - (1) Amoebiasis
  - (2) Tuberculosis
  - (3) Acute suppurative sigmoiditis
  - (4) Typhoid fever
  - (5) Malignant tumors
  - (6) Ulcers of the small gut from focal infection
  - (7) Diverticulitis of large bowel
  - (8) Meckel's diverticulum
  - (9) Intestinal obstruction
  - (10) Mycotic infections
  - (11) Idiopathic ulcerative colitis
4. Diseases of other intra-abdominal organs:
  - (1) Ovarian dermoids
  - (2) Carcinoma of ovarian dermoids
  - (3) Bone from ovarian dermoids
  - (4) Gallstones
5. Surgical errors:
  - (1) Tearing of gut during abdominal operation
  - (2) Trauma from instruments left in abdomen
  - (3) Trauma from towels and sponges left in abdomen
  - (4) During curettage of uterus
  - (5) Trauma from rectal examinations (proctoscopes, etc.)
6. Foreign agents passed through anal orifice:
  - (1) Instruments
  - (2) Foreign bodies such as bottles, hardware, broomsticks, projecting knobs of furniture
  - (3) Compressed air
7. Miscellaneous:
  - (1) Arsphenamine therapy
  - (2) Pezza catheter used as enterostomy tube

Thus it can be seen that the causes are numerous and varied in character. I was first impressed with this fact when a patient was brought to me who had received a blow in the abdomen when intoxicated. His adversary struck him with his fist and ruptured the jejunum high up. Evidently the abdominal wall was relaxed when struck. Just recently I operated on a young woman who had had a Pezza catheter placed in the lower ileum as an enterostomy tube for an intestinal obstruction. Later, when it was time to remove the tube, it was pulled up and cut off flush with the skin. The remains of the catheter was thought to have fallen back into the canal of the gut and to have made its exit several days later per vias naturalis. Unfortunately the catheter was pulled partially out of the lumen of the gut and did not reenter the canal, but remained within the abdominal cavity. This rubber tube caused a severe cellulitis and eroded into another loop of ileum.

In a study of the perforated cases at the John Gaston Hospital from 1928 to 1937 there were found to be 315 cases resulting from trauma and only six nontraumatic cases. Three hundred six of the traumatic cases were due to gunshot and knife wounds. This larger percentage of gunshot and knife wounds can be understood when one realizes this is a city institution and a large portion of the cases comes from the negro districts and lower class of whites. The nine remaining traumatic cases were listed as follows:

1. Auto accidents, 2
2. Blow in abdomen, 1
3. Compressed air to seat of pants, 1
4. Fall from bicycle and struck by handle bar, 1
5. Fall from tricycle and struck by handle bar, 1
6. Struck by log, 1
7. Sudden twist in a scuffle, 1
8. Proctoscopic examination, 1

The nontraumatic causes were listed as:

1. Typhoid fever, 3
2. Volvulus, 2

3. Carcinoma of intestine, 1

There were no perforations from diverticuli noted though there were about thirty cases discharged during this period.

At the Baptist Hospital a higher class of patient is catered to and negroes are not admitted. From 1930 to 1936 there were much fewer gunshot and stab wounds in proportion to the other causes for perforation. There were forty-five gunshot wounds and six stab wounds. Nine other traumatic perforations were:

1. Punctured wounds, 4
2. Struck in abdomen by fist, 1
3. Kicked in abdomen by mule, 2
4. Kicked in abdomen by man, 1
5. Struck in abdomen by plank, 1

The cases of nontraumatic origin were:

1. Diverticulitis, 6
2. Diverticulum, 1
3. Typhoid fever, 2
4. Carcinoma, 2

Thus we see that in these two hospitals there were only seventeen perforations due to disease out of a total of 392 patients suffering from perforations. Three hundred fifty-one patients of the 392 were suffering from gunshot wounds. It appears as though the armistice has not yet reached this country.

Perforations of the intestinal tract are not as common as many other conditions with which the surgeon has to contend. Perforations due to disease are even less common. No matter what may be the cause, the result is a disaster of great magnitude, and the sooner the damage is repaired the greater are the chances for survival. In any event we are dealing with a peritonitis, and the outcome depends on whether or not this infection has become overwhelming. Therefore, the mortality rate is directly proportional to the duration of the perforation.

The symptoms of perforation unfortunately are not pathognomic and there is no one sign that is infallible, hence the difficulty in making a correct diagnosis. Unfortunately the abdominal complaints do not always arise immediately, but are slow in developing and may not begin for several hours after the perforation has taken place. A patient was struck in the abdomen by a log. He complained of mild cramping pain in the umbilical region about three hours after the accident. Several hours later a drink of water caused severe abdominal cramps, nausea, and vomiting. When seen by me twenty-four hours later, I opened the abdomen and found a small perforation of the jejunum which had been partly plugged by an outpouching of mucous membrane. Patients have been known to have walked a considerable distance or returned to work after the accident only later to go into shock and the gravity of the condition became apparent. In the sudden large perforations where no protective reaction has sealed over the rent in the gut wall there is immediately severe pain that rapidly spreads over the entire abdomen. This pain is accompanied by a protective rigidity of the abdominal musculature. There is a diminution in peristalsis and later a cessation of peristalsis. These symptoms may be accompanied by nausea and vomiting. Shock is usually present.

The findings, of course, are due to a peritoneal irritation. Later a true peritonitis develops, and the general condition of the patient is progressively worse. The breathing is entirely thoracic, the pulse is rapid and thready, the expression is pinched, and the temperature elevated. In the early stages if the pulse continues to increase in rate and weakness in spite of measures taken to combat shock, and if the abdomen becomes distended instead of flat with dullness developing in the flanks, we then have also a severe hemorrhage to aggravate the gravity of the situation.

In other cases the perforation may be so small and so slow in its formation that the symptoms are mild and remain localized, simulating at times an acute attack of appendicitis. Between these two extremes are all gradations of symptoms. Where there is pre-existing disease there may be only a marked increase of the symptoms already present. The most important one point of all is to recognize that some acute abdominal condition has developed. An immediate exploration is demanded, and after the abdomen has been opened, the nature of the disturbance will be revealed.

The treatment should be first to combat shock if such is present. If, in spite of infusions, transfusions, heat, and so forth, the pulse continues to rise and the depth of shock is not lessened, further delay is useless, and unless the patient is in extremis, an immediate exploration should be done, for shortly death will ensue. When the abdomen has been opened, active bleeding should first be located and controlled. If a perforation is present, gas and intestinal contents will be seen when the peritoneum is opened. The intestines should be carefully searched throughout their entirety for perforations since numerous ones are often present. The greatest number I noted in any one patient in the cases studied was fifty-five. Some perforations will require simple suturing. Others will be so extensive that suturing would cause a later obstruction of the lumen. In this condition an intestinal resection is demanded. It is well to drain these cases with cigarette drains, especially if much peritoneal soiling has taken place, for the formation of residual abscesses may be prevented. Often it is advisable to give a transfusion during operation or at least afterward to combat if possible the ill effects of the already present shock and hemorrhage.

The subject of perforations of the intestine is presented to you in order that we may keep always in mind the seriousness of such accidents and the frequency of death resulting from these lesions. Early diagnosis and early operation are the prime essentials in the reduction of mortality.

DISCUSSION

DR. JOHN LUCIUS McGEHEE (Memphis): Dr. Mitchell has called our attention to a type of accident which we are encountering with an increasing frequency—a type of accident which is productive of a fifty to sixty per cent mortality rate. This mortality can only be reduced by early diagnosis and early operation. The causes of this high mortality are shock, hemorrhage, and peritonitis.

Fraser and Drummond have shown that little leakage occurs in the first six hours, because peristalsis is absent and the everted mucosa acts as a plug. Even in complete tears leakage is not great early, because of contraction of the circular muscle in the severed end. This substantiates the belief that immediate operation on a patient who is in shock only adds insult to injury and that it is better to improve the condition first by measures to combat shock. Immediate treatment then becomes the treatment of shock when it is present, but if shock is absent, one should not wait for it to appear, but immediately perform laparotomy.

The outlook is better for perforations high in the intestinal tract than lower, because of the relatively cleaner intestinal content of the higher segments and hence the less likelihood of peritonitis. However, high tears are less likely to cause such early and striking symptoms as those in the lower part of the tract, so patients whose tears are high usually come to operation later.

Vergoz, Homar, and Ricard[1] have described what they are pleased to call "the vulnerable zones of the small bowel." They have shown that traumatic lesions of the small intestine generally involve the jejunum and usually at a point near its origin at about the duodenojejunal angle. Those of the ileum are near the ileocecal junction.

From many anatomic researches, those by Grégoire especially, it is known that the coils of the small gut occupy the left side of the abdomen and pelvis, and that of these coils the first and last are located in a position determined by relation to the spine and upper portion of the pelvic girdle. They have shown that there are essentially twelve principal coils of small intestine and only the first two, or at most the first three, are in contact with the spine by their mid-portion, while the two terminal loops of the ileum ascend from the pelvis in front of the promontory of the sacrum and the sacroiliac synchondrosis, and so the spine above and this bony plane below expose them to the vulnerating agent. Of thirty-one traumatic wounds of the small intestine, twenty-two ruptures were in the jejunum and nine in the ileum. Between these two vulnerable zones there are about fifteen feet of bowel on which trauma seems to have little effect, so in these abdominal contusions exploration should be directed especially to the beginning jejunum and the terminal ileum which are usually exposed, and thus avoid total evisceration of the small bowel, always attended by much shock.

In carrying out surgical treatment, that procedure which can be done most quickly, with the least amount of shock and trauma, should be chosen. The operation should not be unnecessarily prolonged and a constant check should be kept on blood pressure, pulse, and respiration, so immediate treatment can be undertaken if shock supervenes. Long-time-consuming resections should be avoided unless viability of the injured intestine is questionable.

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[1] C. Vergoz, A. Homar, and E. Ricard: Presse. Med., 43: 981, June, 1935.

The abdomen may be opened by an incision through either rectus, to give the best exposure, unless localizing signs are present which indicate the section involved. In such cases the incisions may be placed to facilitate repair. After the peritoneum has been opened, if active bleeding is present, it is better to bring the intestines outside the abdomen and immediately to control the bleeding. If there is no bleeding, it is better to examine the bowel and mesentery minutely, starting at some fixed point such as the ileocecal region and drawing several inches out at a time and immediately replacing it, following up or down the whole tract. When the perforation is found it is better to cover it with a warm moist sponge and lay aside until the survey is complete, then the proper method of mechanical repair can be begun. Valuable time can thus be saved.

The question of drainage is an individual one and depends entirely upon condition found. The same principles apply in these as in all operations on the abdomen.

Postoperative care consists in applying the principles governing the treatment of peritonitis—mainly, the proper use of morphine, the maintenance of water balance, the prevention of distention, and dechlorination.

DR. JERE L. CROOK (Jackson): Mr. Chairman and Members of the Tennessee Medical Association: As one who has frequently, over a long period of years, had the privilege of attending meetings of this great organization, I may be permitted one or two reflections and impressions of the morning session, and the first and most obvious one to all of you will be the high character of the presentations to which we have listened and the fact that the majority of them were made by the second generation of physicians. It is particularly pleasing to me to discuss a paper which has been so ably presented by one of the second generation.

I do not feel that any subject could be of greater significance and interest to any body of physicians and surgeons than the one presented so ably by Dr. Mitchell. I am one who has operated for the various effects of trauma in the abdominal cavity from the time when the heel of the mule was a frequent cause of perforation up to the time when the airplane claims its victims.

One or two practical observations I wish to make, because the subject has been ably presented and freely discussed. First, I wish to refer to a case which in my entire medical career has given me the greatest spiritual uplift and the greatest surgical satisfaction. That was a case where one of my own classmates telephoned me from an adjoining town one hot August night: "Jere, my only boy has been shot through the abdomen. He is on his way to you in an automobile." This was some years ago, and we found sixteen perforations in the ileum and in the jejunum. They were all repaired, and for six days and nights the father walked up and down the halls of my little hospital, hoping and praying that nature would help us out. I saw that boy a few days ago. He lives in Nashville; he is over six feet tall, weighs exactly 200 pounds, and has a beautiful wife and two children.

A final practical point I wish to emphasize. There are very few cases of genuine traumatic hernia, as we all know. In fact, it is denied by some authorities that true traumatic hernia ever occurs unless there was existing in the individual patient a predisposition to hernia with a weakness of the abdominal ring so that a mere force of any kind, whether a broad force striking the entire abdomen or the strain of pulling up a fence post, would produce a hernia. The nearest approach to it that I have ever seen was in a man brought to me from Trenton, who had been struck in the abdomen with the copper head of a hose pipe, producing immediate evulsion of the intestinal contents through the ring. He was brought to me for herniotomy. In repairing the hernia I made a little exploration further up and found a rent in the ileum, a rather large rent. The patient was not brought for several hours and peritonitis had already begun. The question came up immediately for decision as to what to do about this rent. I simply slipped a rubber tube in the rent, closed it in with a purse string suture, and brought it out through the abdominal wall, and to that little piece of technic I believe the patient's recovery was due, because he made a good recovery.

These things come up at times. If you have an old case, say twenty-four hours or longer after the receipt of the injury, and you see the inevitable signs of beginning peritonitis, it sometimes becomes a lifesaving measure to do an enterostomy through one of the perforations. It is such a simple thing to do and it is a very practical thing to do, and judged by the results, it is a very efficient and proper thing to do.

I wish once more to express the very great pleasure it has given me to listen to the entire morning program, and I congratulate the program committee upon the high class of presentations we have had.

DR. R. L. SANDERS (Memphis): It is a pleasure to discuss Dr. Mitchell's paper. He is a protege of the late John B. Deaver of Philadelphia. Dr. Mitchell's presentation reminds me of the sayings of Dr. Deaver, which I have heard on many an occasion. It goes like this: "In the *Philadelphia Ledger* each morning one sees beneath the headlines these words, 'It's all true and it's all here.'" Dr. Deaver's papers usually ran true to form.

Dr. Mitchell has given us a most excellent paper this morning, and has told us a great amount of truth in his sayings. Such papers as this are very apropos, because most of us are constantly encountering such serious problems, and many times they are most difficult to work out adequately and properly. Dr. McGehee and Dr. Crook have already covered a large part of the field, and my remarks will be in a general way, citing some specific instances of conditions that may be encountered.

I wish to call especial attention to some of the things Dr. Mitchell mentioned, particularly foreign bodies that have been swallowed. A few years ago, I saw a nurse who had complained of pain in the upper abdominal quadrant, and symptoms suggesting a slow perforation of the intestine. At exploration I found a large fishbone, which had passed through the pylorus, and one end of it had penetrated the duodenum and was still hanging in the pylorus. When pylorospasm was present, and this was so most of the time, considerable pain was experienced because of this abnormal position of the foreign body and the amount of disturbance of function and also local inflammatory reaction. All that was necessary to do was to simply drag the bone out, because the end of it was already protruding, and suture the duodenum loosely at this point. Her convalescence was satisfactory, and she has been all right since that time.

Another serious accident has come under my observation at least twice. A rather enthusiastic effort was made by the roentgenologist to give a patient a barium enema in order to definitely decide the question of a possible lesion of the colon. A little undue pressure was used, the sigmoid perforated at the point of the lesion, and a fatal peritonitis followed in both instances. I sound a warning of such a procedure because it has serious possibilities when obstruction exists, especially in the presence of a necrosing type of lesion.

There is another condition that we see occasionally, which is brought about by the use of surgical pituitrin. I am sure this drug is used less at the present time than it formerly was. I recall an instance of a friend of mine in Memphis who had done an operation for some urologic condition and the patient developed a great deal of gaseous distention of the intestinal tract. Many enemas were given without result, and the distention continued. A great deal of the fluid was retained and none expelled. Surgical pituitrin was then given in rather large and frequent doses until suddenly the patient had a severe pain and went into shock and collapse. I saw him and opened the abdomen immediately and found a large split in the right half of the colon where a spontaneous rupture had taken place, presumably from the overdistention occasioned by the ileus, the repeated enemas, and then by violent contraction the bowel had ruptured. Of course, this is only a possibility and may never be repeated, but at the same time, it calls to our attention the fact that such things do occur, especially when a large amount of surgical pituitrin has been used. I am a very strong advocate of the use of pitressin to prevent ileus, and I believe the results have been very satisfactory in most instances. I have also used prostigmin to a great advantage, and now I am using it almost routinely in the abdominal cases. It has an advantage over pitressin in that it does not disturb blood pressure. On this account, I not only use it, but recommend it to keep down distention and to keep the peristaltic activity proper.

I thoroughly agree with the essayist, and also with Dr. Crook, who state that by and large we see a great many cases where the intestinal tract has been damaged and perforated. We see the results of plow-handle kicks, horse kicks, human kicks, both backward and forward, producing damage to the intestinal tract, but this rapid motor age in which we are now living produces the most serious type of kick, the damaging effects of which we are called upon to treat. Dr. Mitchell's paper, therefore, is most timely, and should be taken seriously, and I believe we all join in expressions of appreciation to him for this splendid paper.

DR. E. D. MITCHELL, JR. (closing): I have nothing further to add, but I do want to thank these gentlemen for their most generous discussion.

MANEUVERS IN THE ABNORMAL SECOND STAGE OF LABOR*

W. G. Rhea, M.D., Paris

IT IS TRUE that one should not follow set rules to determine the abnormal from the normal during labor. However, it is consistent with good judgment and comforting to have certain classical facts well in mind. They will help prevent one from erring too far on the side of conservatism or radicalism. Then, too, the fact that circumstances alter cases is certainly true in obstetrics. It does not necessarily follow that a procedure suited for an expert would be suited for you or for me.

It has been stated that relatively normal pains for one and one-half to two hours after the cervix has been fully dilated without spontaneous delivery would constitute an abnormal second stage.[1, 2, 3, 4, 5] This same circumstance warrants an active interference in most cases, provided the well-known conditions are present and are adhered to.[19] The need for interference is due to abnormal position and size of the fetus, weakness of the powers, placenta or cord complications, and disease or toxemia of the mother. The abnormal second stage may be terminated by the use of forceps, by version and extraction, by breech extraction, or by Caesarean section. The vital factor is to recognize the need for outside help and to render it wisely.

This paper will deal chiefly with the forceps for completing labor and will report one hundred consecutive hospital deliveries.

The prophylactic or outlet forceps with episiotomy, as is so often done today, would not be generally considered as an operation performed because of an abnormality. In the hands of men who do hospital obstetrics and have proper facilities and experience this simple maneuver is popular. It is a protection for the mother. It carries no increased mortality for the child.[6] De Lee called this the "prophylactic forceps" in 1920. He listed as requirements full dilatation by normal labor, rupture of the membranes, head on the perineum, occiput anterior, mediolateral or median episiotomy, and general anesthesia, preferably gas. The head is then lifted over the perineum with the forceps. The placenta is delivered and the episiotomy is repaired. The placenta may be delivered after the repair. This is accomplished during the same anesthetic, and of course strict operating room asepsis must be used throughout.[7] This use of the forceps is not advised in the home. In deliveries which take place in the patient's home the use of forceps should be limited to necessary interference.

An episiotomy should be used even more widely than the prophylactic forceps. It is reported that ninety per cent of primipara will tear and have relaxation if let alone.[6] The proper repair of an episiotomy leaves a better perineum.[7] The repair is easier and healing more certain. The perineum is not overstretched. General relaxation with resulting cystocele and rectocele is less.[8] Brain injury in the child is less, especially in primipara.[18]

The forceps were first used in the late seventeenth century.[9] At the present time the Simpson instrument is the one in general use. The De Lee modification of the Simpson is frequently used. It has longer shanks, larger hooks, and simpler handles.

In low forceps the blades are applied to the head after its widest diameter has passed the ischial spines. In midforceps the head is at or above the spines and in high forceps the head has engaged, but has not passed the pelvic brim.[7] At any point in the pelvis the function of this instrument should be limited to traction and rarely to rotation. The execution of low and midforceps is generally not difficult. The writer believes that high forceps should not be used and that their use for rotation should be left for the expert whose reputation is above reproach.

Stander[10] of Johns Hopkins reported that their incidence of forceps delivery for abnormal conditions was about nine per cent in over 15,000 deliveries. Low forceps constituted over eighty per cent, while high forceps accounted for less than two per cent.

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*Read before the Tri-County Medical Society, McKenzie, September 14, 1937.

The indications for forceps may come from the mother or from the fetus. Weakness or inadequacy of the powers of labor is the most common cause.[7, 3] Uterine inertia or prolonged second stage accounts for over half the forcep operations.[10] Good second stage pains which fail to advance the head in midpelvis or at the outlet are an indication for forceps if certain conditions are present.[11] Delay in giving needed help in this condition accounts for many fetal complications, such as cerebral injury, asphyxia, and impaired fetal heart sounds.[11] A mother with certain heart and pulmonary diseases or with phases of toxemia should receive assistance. A mildly contracted pelvis is a frequent indication.[19] Failure of the occiput to rotate resulting in a transverse arrest or occiput posterior is a frequent fetal indication for forceps. Changes in the fetal heart tones, especially with slowing and irregularity, indicate distress. The presence of meconium in the amnionic fluid in cephalic presentation also indicates distress. In prolapse of the cord and abrupto placenta with full dilatation forceps may be indicated. In the case of prolapse of the cord, if the pulsations are feeble and examination gives reason to believe that the death of the child is eminent, one should think carefully before performing a forcep operation. De Lee[4] states that "it is no feat to be proud of to deliver a child at the expense of extensive maternal injuries when it dies after a few minutes or hours from late asphyxia or cerebral hemorrhage." The question should always be: What can this patient accomplish? not What can she endure? At the same time, however, one should not wait too long and become guilty of omission by permitting unnecessary injury to the mother or fetus.

It is probably true that no graver error may be committed in obstetrics than to attempt a forcep operation when certain very definite conditions and indications are not present. An all-important point is to believe, after a careful examination which should include pelvic measurements, that there is sufficient room for delivery without serious damage to the fetus. The head must be engaged and it must not be too large or too small. Complete dilatation of the cervix must be present. Traction through the forcepes on a cervix not fully dilated is unpardonable.[3] The membranes must be ruptured and out of the way.[19] This will prevent possible injury to the placenta and will assure a better application. Correct presentation must be present and the child should be living. The vertex should present. The forceps may be used in the face presentation if the chin is anterior. Other presentations must be changed or delivery should be accomplished in a different way. It is also important that the bladder and rectum be empty. In addition to these definite conditions,[3, 7, 4] it is important that rigid asepsis be maintained and that the patient be anesthetized.

The technique for applying forceps is standard and is described in a number of texts.[7, 4, 5] Nevertheless, certain of the points will be presented since it is believed that it is not unpleasant to hear even an amateur do his best in rendering parts of a classical melody. There are three groups of facts to which all subscribe. First is the rule which says that the front or the concave surface of the forceps should look or face toward the point of direction. In the vertex presentation the occiput is the point of direction. Second, there is the rule that the left blade held by the fingers of the left hand is introduced along the guiding fingers of the right hand in the left side of the pelvis. The right blade in the fingers of the right hand is passed to the right side of the pelvis.[9] Third, there are four distinct steps in a forcep operation: application of the blades; adaptation or locking; extraction of the head; removal of the instrument. These steps are always preceded by proper lubrication of the birth canal and correct diagnosis of the position of the head.[19]

In the application of the blades the theme song is gentleness. Force and roughness have no place. The handle is held lightly between the thumb and the first two fingers. Two or more fingers of the other hand are inserted into the vagina and guide the blade as it passes in immediate proximity to the head, while the handle is being brought down until the lock rests against the perineum. De Lee says that the forcep should be "held like the pen and passed with the delicacy of a urethral sound."

If the blades have been passed correctly, the locks will fall together or adapt themselves without effort. Although force has no part in this maneuver, gentle manipulations are not infrequent before the lock slips together.

The next step is the extraction of the head. With this a varying amount of force, well controlled and properly directed, is necessary for a slow advancement of the head. Traction is made during the pains. The handles are freed as the pain subsides, and the head is allowed to retract. If uterine contractions are absent, the forceps are used to imitate the pains.[7] The direction of force should always correspond to the axis of the pelvic canal at any given point.[7] The fetal heart sounds are checked after each traction.

Burdett Wylie[12] of Western Reserve University, in 1935, reported traction observation in 880 unselected forcep cases with undue delay in advancement during the second stage. He recorded by using the tractinometer or spring mechanism the actual pull in pounds with each traction to complete the second stage. The perineum was ironed out and forceps were accurately applied. Traction was used only during pains and with just sufficient force to advance the head. The forceps were removed when the head could be controlled through a "chin towel." In the primipara the average pull was thirty-four pounds and there were 3.7 pulls. In the multipara the average pull was twenty-four and one-half pounds with 1.9 pulls. The average duration of each pull was thirty seconds. Pulls and pounds increased with age, varied in proportion with size of the baby, and with mid, low-mid, and low positions of the head. Wylie concludes that these findings would correspond to spontaneous effort in most cases. De Lee recommends that probably not more than a sixty-pound pull should be exerted. One should take an ordinary pair of hanging scales and notice that it does not take a great effort to pull twenty-five to thirty-five pounds or even sixty pounds. In other words, a modest, well-directed force is needed and not the muscles of the back with the feet or knees braced.

The last act in the forcep operation is the removal of the blades. This may take place when the head is ready to pass the introitus and is in complete manual control. This control may be accomplished by the fingers of one hand supporting the perineum through a towel, preventing retraction of the chin, while the thumb of the same hand presses against the occiput. The lock is freed and the right blade is removed by lifting the handle very gently up and over toward the inguinal region on the opposite side, care being taken not to allow the front of the forceps to injure the mucous membrane just lateral to the urethra. This is repeated with the left blade. If resistance is encountered at any point, the movement is stopped, the blades are steadied by the assistant as the head is manually delivered. When the blades are being carefully slipped forward in removal, the head must be under excellent control because at this point it may "pop" through the perineum, causing a bad laceration or extension of an episiotomy. The blades may be left in place until the head is delivered. In this way they are used to regulate the advancement of the head over the perineum.

If one would keep in mind the above principles and acquire this plain standard technique, one should be qualified to carry out the great majority of all forcep operations, and would be a long way on the road toward the management of the remaining small per cent.

The complication generally encountered in other than simple forceps is the persistent occipitoposterior.[17] Many normal deliveries begin with the occiput posterior and to the right or left. Dr. Pride of Memphis says that seventy per cent of all cases begin in this way. In seventy to eighty-five per cent spontaneous rotation and delivery will occur.[2, 13, 17] Of the remaining cases, a majority may be manually rotated by the Pomeroy or Danforth[17] maneuver. If this fails, the Scanzoni operation may be used. Here the head is turned with the forceps, the handles traveling in a circle, while the tips or ends remain almost stationary. When the occiput has been brought anterior and the forceps are "upside down," the blades are removed and reapplied in the standard way.[5, 6] There are some who favor the use of the Kielland forcep in certain cases where rotation does not occur. Those who have had experience with this instrument claim advantages such as ease of application and the fact that after the head has been rotated it is not necessary to remove and reapply the blades.[14] In high posterior positions version has a definite place.[17] These rotation maneuvers are generally unnecessary and are quite hazardous.

The remaining methods of terminating the abnormal second stage by the vagina would be the different forms of version followed by extraction and by breech extraction. Potter of Buffalo has been the greatest advocate of version, performing this operation in about ninety per cent of all his cases. In the remaining ten per cent Caesarean section is usually done.[15] The majority of breech labors, which occur in one to three per cent of cases, end without special help from the physician. One should have everything in complete readiness, however, for operative interference. When progress has stopped, with the cervix fully dilated and membranes ruptured, it is best to anesthetize the patient, bring down the anterior leg or both legs, and continue with the standard technique of extraction. The frank breech is the most difficult.[16]

One hundred consecutive private hospital deliveries are reported by the writer.

	Cases	*Per Cent*
Normal deliveries	59	59.0
Presentations:		
Vertex	92	92.0
Breech	6	6.0
Shoulder	2	2.0
Positions:		
Persistent occipitoposterior	10	10.0
Deep arrest occipitotransverse	3	3.0
Occipitoanterior (including spontaneous rotation)	78	78.0
Forceps operations:		
Low	27	27.0
Mid	4	4.0
High	0	0.0
Breech extraction	6	6.0
Version and extraction	2	2.0
Caesarean section	2	2.0
Episiotomy	46	46.0
Primipara	62	62.0
Episiotomy	42	42.0
Lacerations	9	9.0
No lacerations	9	9.0
Lacerations:		
First degree	9	9.0
Second degree	2	2.0
Third degree	1	1.0
Retained placenta (manual removal)	4	4.0
Twins	2	2.0
Preliminary analgesia	76	76.0
Terminal anesthesia	93	93.0

AVERAGE DURATION OF LABOR

Primipara:	
First stage	13 hr. 6 m.
Second stage	1 hr. 6 m.
Third stage	14 m.
Total	14 hr. 26 m.
Multipara:	
First stage	12 hr. 12 m.
Second stage	39 m.
Third stage	16 m.
Total	13 hr. 7 m.

LONGEST DURATION OF LABOR

Primipara	41 hr. 44 m.
Multipara	50 hr. 00 m.

SHORTEST DURATION OF LABOR

Primipara	4 hr. 30 m.
Multipara	2 hr. 5 m.

There were four infant deaths. There were four premature infants, one of which died within twenty-four hours, while two others died within seven days. One apparently normal baby with normal delivery died within two hours, cause undetermined. All one hundred of the babies were born alive. There were no maternal deaths.

With one final word I would like to pay tribute to the real hero of obstetrics, the man who, because of circumstances, is compelled to carry through to completion the great majority of all abnormal labors without the aid of hospital facilities and often without the aid of consultation or assistance and to encourage him "that properly done forceps operations are more desirable than the conclusion of labors by the use of pituitrin."[19]

SUMMARY

1. Second-stage pains for one and one-half to two hours without delivery constitutes an abnormality and justification for interference.
2. The prophylactic forcep is indicated and is safe for mother and child.
3. The episiotomy gives a better perineum in about ninety per cent of the primipara.
4. Low forceps are applied when the head is below the ischial spines, mid-forceps at the spines, while in high forceps the head is engaged in the brim.
5. Indications for forceps are maternal and fetal.
6. The conditions necessary for forceps: full dilatation; membranes ruptured; vertex presentation; proper size of head and pelvis.
7. Forceps technique concerns the front of the forceps toward the point of direction; left blade, left hand into left side of pelvis and right blade, right hand into right side of pelvis; the adaptation or locking; extraction of the head by a well-controlled and properly-directed force which accompanies or simulates the pains; removal of the blades which may be done just before or just after the head passes the vulvar ring.
8. Seventy to eighty-five per cent of occipitoposterior cases rotate spontaneously.
9. Abnormal rotation may be by the manual method, by the Scanzoni operation, and by Kielland forceps.
10. Version and extraction and breech extraction have their definite places in the management of the abnormal second stage.
11. The use of forceps to terminate labor is better than the use of pituitrin.

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THE TREATMENT OF LOBAR PNEUMONIA*

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THIS PAPER represents a summary of the more recent forms of treatment of pneumonia and an evaluation of their effectiveness. For centuries pneumonia has been considered a self-limited disease, and although there have been many therapeutic measures tried, the mortality rate until recently has remained unchanged.

Various summaries of the death rate from pneumonia place the mortality rate from twenty to thirty-five per cent. Painton and Ulrich, in a review of 1,298 cases, report a death rate of 38.5 per cent. Benjamin, Blankenhorn, et al., in their analysis from the records of the Cincinnati General Hospital report a death rate of 25.1 per cent. In 1934, according to the New York State Department of Health and the Metropolitan Life Insurance Company statistics, the death rate was 79.4 per cent per 100,000 population. Others report figures between these mentioned. These figures represent the mean death rate, as the rate differs from year to year, varying with the seasons, the race, age, and sex. For example, the death rate is apparently higher in the summer months. There is reported an almost equal number of white and negro patients suffering from lobar pneumonia, but the death rate seems to be slightly higher in negroes than in white people. Also men are afflicted about two and a half times as often as women, and the death rate is about ten per cent higher in men than in women. Most of the cases appear between the third and fifth decades of life, the incidence of occurrence being greatest in the fourth decade and the greatest number of deaths appearing after the fourth decade.

To compare pneumonia in Memphis with elsewhere, we reviewed the cases at the John Gaston Hospital during the years 1935, 1936, and 1937. The accompanying tables show the incidence and mortality rates of the different types for the three years.

FIGURE I

Showing Mortality Rates in Relation to Incidence of Types

1937

Type	*Number of Cases*	*Incidence of Type Per Cent*	*Number of Cases Died*	*Mort. Rate Per Cent*
I	36	14.9	9	25.0
II	23	9.5	7	30.0
III	17	7.8	5	26.0
IV*	149	61.6	32	21.0
VII	14	5.8	8	57.0
VIII	1	0.4	0	0.0
Total Cases Typed	242	79.3	61	25.2
Total Cases Not Typed	63	20.7	31	49.2

1936

Type	*Number of Cases*	*Incidence of Type Per Cent*	*Number of Cases Died*	*Mort. Rate Per Cent*
I	46	15.4	8	17.4
II	72	24.1	14	19.4
III	18	6.0	3	16.7
IV*	147	49.3	31	33.5
Total Cases Typed	283	85.5	62	21.9
Total Cases Not Typed	47	14.5	27	57.4

1935

Type	*Number of Cases*	*Incidence of Type Per Cent*	*Number of Cases Died*	*Mort. Rate Per Cent*
I	87	53.0	17	19.6
II	52	31.7	25	48.1
III	3	1.8	2	66.7
IV*	22	13.5	3	13.6
Total Cases Typed	164	63.1	47	28.7
Total Cases Not Typed	96	26.9	24	25.0

*Type IV in 1935 and 1936 included all cases not belonging to Types I, II, and III. In 1937 Type IV included all cases other than Types I, II, III, V, VII, VIII, XII, and XIV.

To be noted is the frequency in Memphis of Type IV in 1936 and 1937, illustrating the epidemiologic tendencies of the disease. Also to be noted is the low mortality at the John Gaston Hospital for all pneumonias, apparently not being influenced by different forms of therapy used during the different years. It is worth mentioning that the average patient at John Gaston was ill for five days before hospital admission and that a large proportion of the cases died within twenty-four hours after admission, thus unfairly increasing the mortality.

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*Read before the Tennessee State Medical Association, Nashville, April 12, 13, 14, 1938.

Figures 2 and 3 compare the mortality rates during the three-year period with other years. These mortality rates are lower than those given elsewhere in the United States.

Figure 4 is a study of bacteremia. It illustrates, first, that most of these patients had blood cultures and, secondly, that bacteremia mortality at John Gaston is similar to elsewhere. Note the high mortality in bacteremias in Types II, III, and VIII.

FIGURE II

SHOWING INCIDENCE AND MORTALITY OF DIFFERENT TYPES OF PNEUMONIA DURING 1935, 1936, AND 1937

Type	*Total Number*	*Deaths*	*Mortality Per Cent*
I	169	34	20.1
II	152	46	30.3
III	40	10	25.0
IV*	318	66	27.5
VII	14	8	57.0
VIII	1	0	0.0
Total Cases Typed	694	164	23.7
Total Cases Not Typed	201	86	42.2

*Type IV in 1935 and 1936 included all cases not belonging to Types I, II, and III. In 1937, Type IV included all cases other than Types I, II, III, V, VIII, XII, and XIV.

FIGURE III

SHOWING MORTALITY RATES FROM 1925 to 1937

Year	*Total Cases*	*Mortality Per Cent*
1935	260	27.2
1936	330	26.4
1937	305	30.1
Total, 1935-36-37	895	27.9
1925 to 1934, inclusive*		31.3

*Lowest mortality rate for any year between 1925 and 1934 was 26.6 per cent; highest was 36.6 per cent.

These statistics include patients living less than 24 hours after hospital admission. When such patients are omitted, the mortality rates are reduced from 3 to 5 per cent.

FIGURE IV

SHOWING INCIDENCE AND MORTALITY OF BACTEREMIC CASES

BACTEREMIA 1935-36-37

Type	*Number of Cases*	*Death Rate Per Cent*
I	46	39.1
II	43	67.4
III	4	100.0
IV	39	53.8
VII	4	100.0
Total	136	55.9

Total pneumonia patients having blood culture: 88.3 per cent. Incidence of bacteremia: 18.5 per cent.

FIGURE V

SHOWING INCIDENCE AND MORTALITY RATE OF DIFFERENT TYPES AT JOHN GASTON HOSPITAL COMPARED TO ELSEWHERE

Hospital	*Type I*		*Type II*		*Type III*		*Type IV*	
	Incidence	*Mortality*	*Incidence*	*Mortality*	*Incidence*	*Mortality*	*Incidence*	*Mortality*
John Gaston 1935-36-37	24.4	20.1	21.8	30.3	5.8	25.0	45.5	27.5
Cecil (New York)	32.1	28.2	23.0	48.8	11.1	42.2	33.6	30.7
Bullowa (New York)	31.0	28.3	19.0	39.7	12.0	39.6	38.0	
Blake	32.0		3.0		20.0	44.3	35.0	

Cole shows death rates as follows: Type I, 25-30 per cent; Type II, 25-30 per cent; Type III, 45-50 per cent; Type IV, 15-50 per cent.

Type IV includes the miscellaneous group of pneumococci which have recently been subdivided into many different types.

Figure 5 illustrates the preponderance of the disease in males. Another study which we have not charted here shows that at John Gaston Hospital the highest age incidence is between twenty and twenty-nine years, a decade younger than generally given.

Summarizing the report from Benjamin, Blankenhorn, et al., we find that Type I is responsible for thirty-two per cent of the cases of pneumonia; Type II is responsible for eleven per cent; Type III, ten per cent; Type IV, four per cent; Type V, nine per cent; Type VII, eight per cent; Type VIII, six per cent. This comprises eighty per cent of all cases, and the remaining twenty per cent falls in the twenty-six other types.

Recently there have been many reports of the success of serum treatment in pneumonia, but the physicians at large have not generally accepted it as an established therapeutic measure. There are several factors which account for the retardation of this type of treatment. In the first place, if the treatment is to be successful, the serum must be administered early. To do this, we must have the facilities for rapid and accurate typing of the disease so that the proper serum can be administered. In addition, the cost of the serum has been a prohibitive factor to many. The lack of general use creates some doubt in the minds of the physicians as to whether it is worth while to recommend to the patients that they spend this amount of money.

In a discussion of serum therapy, it will be well for us to summarize its history. In 1886 Weichselbaum established that the pneumococcus was the cause of lobar pneumonia. Sometime later, Neufeld discovered that the pneumococcus was soluble in bile, and thus the bacteriologists were able to differentiate the pneumococcus from the streptococcus. In 1909 Neufeld and Handel demonstrated the different types of pneumococci, and they gave an account of the treatment of pneumonia with the use of antipneumococcic horse serum. In 1913 Dochez and Avery of the Rockefeller Institute showed that there were three fixed types of pneumococci which comprised about eighty per cent of all of the strains encountered in lobar pneumonia, and they grouped the remaining twenty per cent in a fourth class called Group IV. In 1924 Felton developed a concentrated antibody solution and produced what we now know as Felton's Antipneumococcic Serum. The value of this serum was promptly demonstrated at Bellevue Hospital and at the Harlem Hospital in New York. In 1926 Georgia Cooper of the Bureau of Laboratories of the New York City Department of Health further divided the strains of the pneumococcus grouped in Type IV into twenty-nine distinct types. As a result of this work, we now know of thirty-two strains of the organism.

With these advances, there developed the necessity of a rapid and somewhat simple method of typing the sputum. If the serum was to become generally used and promptly administered, some method had to be devised which could be carried out in the average laboratory and which would not be so time-consuming that the effectiveness of the serum would be lost. In 1931 Neufeld, studying with Etinger and Tulczynska, introduced the specific capsule swelling reaction for rapid typing. As a result of these evolutionary events, there was developed a specific serum for the treatment of Types I, II, V, VII, VIII, and XIV pneumonia. Investigating work is now being done on the development of a serum for other types.

Reviewing the work of the various authors on the treatment of lobar pneumonia with concentrated serum, we find that there are universally good reports. A comparison of the various reports for the serum treated cases and the nonserum treated cases shows that there is a striking reduction in the mortality rate in the serum treated cases. The report of Benjamin, Blankenhorn, et al., from the Cincinnati General Hospital shows a mortality rate for all types not treated with the serum to be 31.5 per cent. The cases treated early with serum had a mortality rate of only 4.11 per cent. Finland, in a summary of 3,682 cases, noted that there was a gross reduction in the serum treated cases (I, II, V, VII) of fifty per cent. Tilghman and Finland, in a report on the "Significance of Bacteremia in Pneumococcic Pneumonia," noted that there was a mortality rate of untreated cases twice that of the treated cases, regardless of age, sex, color, or associated complications. The same authors, in a report on the "Observations in the Treatment of Type V Pneumonia" were able to reduce the mortality rate more than fifty per cent. There was also noted a lower death rate in Type VII.

Since the development of serum, there exists curative treatment for those patients who suffer from Types I, II, V, VII, and VIII, which brings out the fact that there is available serum for the treatment of sixty-six per cent of the patients who suffer from pneumonia.

TYPE I

Type I represents the most common form of lobar pneumonia which we encounter, and this was the first type for which serum was available. Cecil, in an article published in the *Journal* of the American Medical Association, reports the effects of the early serum treatment in Type I lobar pneumonia. There was an almost phenomenal death rate of only 5.4 per cent in a series in which the serum was administered within the first twenty-four hours. In 1,484 cases reported by various workers, the death rate was only 15.7 per cent.

We are all familiar with the typical picture of lobar pneumonia, in which the patient has a sudden onset, usually with a chill, pleuritic pain, and high fever. The dramatic effect of the administration of serum on these patients has been observed many times. Within twenty-four hours, the temperature has been reduced, the pain is diminished, and the pulse and respiration are approaching normal. The evidence of consolidation of the lungs is retarded or diminished, and within a short time—two or three days—the patient is sitting up in bed and is apparently none the worse for his illness. Bacteremia is much less common, complications are fewer, and toxemia is reduced or entirely relieved. According to Cecil, it is apparent from these results that we are using a specific antitoxin to combat a specific toxin, and the result is neutralization. If bacteremia is present, there is an apparent agglutinization of the serum by the pneumococci which are present in the blood stream.

TYPE II

Type II pneumonia apparently does not respond as well to the serum treatment as does Type I. There have been certain difficulties which presented themselves, one of which may have been that the dose of serum was not sufficiently large. However, there is specific serum for Type II and if given in doses of as much as 200,000 to 300,000 units, the death rate is very markedly lowered.

TYPE III

To date, there has not been reported a series of sufficient number of Type III cases in which the serum was used to draw any definite conclusions. There have been technical difficulties encountered in the manufacture of this serum, and it may be that there has been difficulty in obtaining the proper strain of the pneumococcus. Recently, however, there are more encouraging reports, and with the development of the rabbit sera, it is possible that this highly fatal type of pneumonia will be brought under control.

TYPES V, VII, AND VIII

There is quite a large series of Type V pneumonia which has been treated by the use of concentrated serum. It is interesting to know that from Type V there is a very high incidence of bacteremia, with a relatively high death rate. Finland and Tilghman report four deaths in twenty-five cases treated with the serum, and they believe that it is a very effective method of treatment. Certainly, the initial dose should be large—not less than 60,000 units, and preferably 100,000 to 200,000 units—and given within the first twenty-four hours.

The same authors report the effects of serum treatment in Type VII pneumonia, which is one of the most common types, formerly classified under Group IV. The death rate ranges from twelve per cent to forty-four per cent, varying with the years and with the seasons. There was an appreciable lowering of the death rate by the administration of serum and a definite shortening of the period of disability. Serum also seems to be of benefit in Type VIII pneumonia, but there has been a limited number of reports.

Summarizing the treatment of lobar pneumonia by the use of an antipneumococcic serum, we may draw the following conclusions:

(1) At the present time, serum is available for Types I, II, V, VII, and VIII pneumonia. In all probability, within a six-month period of time, serum will be available for additional types.

(2) Serum has definite benefit in these types, reducing the mortality rate at least fifty per cent, in some instances more, preventing complications, and shortening the period of illness.

(3) For reliable results, prompt and efficient typing must be done.

(4) The serum should be administered within the first twenty-four hours, but it is of definite benefit before the sixth day of illness. After the sixth day of illness, little is to be gained by its use.

(5) The dose of serum should be sufficiently large. The initial dose in Type I pneumonia should be at least 60,000 units if bacteremia is not present and 100,000

units if bacteremia is present. There should be subsequent doses of 40,000 to 100,000 units within the next twenty-four hours if there has not been a prompt recession of the symptoms.

(6) The serum should be administered intravenously so that it may be promptly utilized. Recent refinements of the serum have limited the reactions, and a preliminary skin or conjunctival test can be made to detect sensitivity.

OXYGEN

There are various other methods of treatment of lobar pneumonia, and we will discuss briefly some of them. For a long time, oxygen has been utilized in the treatment of pneumonia, but generally not given until the latter stages or until there was evidence of collapse. The purpose of the administration of oxygen is to eliminate anoxemia; to increase the supply of oxygen to compensate for the increase in metabolism; and to decrease the cardiac effort. To do this, the concentration of the oxygen in the alveolar air must be between twenty-three per cent and thirty-five per cent. To obtain this concentration, the inspired air must be of an even higher concentration. The most practical method of obtaining oxygen in sufficient quantities to be of benefit is by the use of the oxygen tent. This is not always available, and in the absence of the tent, it is probably better to use a nasal catheter. Some physicians are enthusiastic about the use of carbon dioxide combined with oxygen, but there has been no unanimity of opinion regarding this. In all probability, it is the oxygen that is the most important element.

DIGITALIS

We are of the opinion that digitalis has no place in the treatment of lobar pneumonia, unless there develops evidence of cardiac decompensation. Montgomery, in a complete study of lobar pneumonia, concludes that digitalis has no place in the treatment. A few years ago, the value of digitalis in the treatment of pneumonia was studied at Bellevue Hospital. There was a higher mortality rate among the digitalis treated cases, regardless of age, sex, color, or other factors. Generally speaking, the circulatory system is depressed by the profound toxemia in pneumonia, and there is no question of decompensation. The only way in which digitalis could be of benefit would be to slow the heart.

PNEUMOTHORAX

For a while, there was quite a wave of enthusiasm for the treatment of pneumonia by the production of a pneumothorax. From all available literature, it seems that the only benefit to be derived from pneumothorax is the relief of pain.

DIATHERMY

The value of diathermy in the treatment of pneumonia is controversial. There have been a good many advocates for it because of the apparent intense relief that the patients experience after its use. While it is true that it is unlikely that you raise the temperature of the lung to any appreciable extent, there are many of us who can testify to the fact that the patients seem much relieved following its use. We have used it extensively in bronchial pneumonia and on the patients that could not be typed for the administration of serum. Twenty- to thirty-minute applications, twice a day, over the affected part will relieve the pain of pleurisy, diminish the rate of respiration, and lend to the patient a temporary sensation of well-being. The only contraindication that might be noted would be the possibility of burns. With care on the part of the technician, this can be reduced to a minimum.

VACCINES

Vaccines have not been extensively used in the treatment of pneumonia. There are very few reports in the literature as to their value, and it is very questionable if they have any place in the treatment. There are no contraindications to their administration, and if given, they should be given early and in sufficient doses. It is recommended that two cubic centimeters be given each day for the first five days.

With the introduction of the modern methods in the treatment of pneumonia, there are certain public health problems that present themselves. In the first place, there is definite evidence that lobar pneumonia is infectious in type. Certain types seem to come in waves, and this has been repeatedly observed in institutions. There has been an attempt to determine if there are carriers for pneumonia, and some evidence substantiates this theory. Certainly, carriers, if they are found, should be isolated from other patients who are ill. In addition to this, patients with pneumonia should be strictly isolated and not allowed to be on the same ward with patients ill with some other disease.

Since the value of the pneumococcic serum has been definitely determined, there is a responsibility on the part of the community to make this serum available to the greatest number of people. This would mean that there would have to be stations where rapid and accurate typing of the serum could be done. In Boston, there have been established centers with technicians provided night and day so that to every practicing physician there is available the means of having the sputum of his patients typed without delay. This could be carried out in each state in much the same way that cultures and other laboratory procedures are diagnosed, but there would be necessarily a demand for much more prompt attention than is given to other laboratory procedures.

The cost of the serum to the patient is a problem of considerable importance. There is great expense in the manufacture of this serum, and of course it comes to the patient at retail prices. It has been estimated that the cost of manufacturing sufficient serum for the treatment of Type I pneumonia is about forty-five dollars. The other forms of pneumonia which require a larger amount of serum would necessitate the expenditure of sixty to seventy-five dollars. This means that the patient is charged between sixty and one hundred twenty-five dollars for his serum treatment. We cannot help but feel that a physician would be neglectful of his duty if he did not utilize the serum, even though this outlay of money seems large. As soon as the public becomes serum-minded in the treatment of lobar pneumonia, we will have a great deal less difficulty. This is easily appreciated when we realize there is no hesitation on the part of a patient to spend one hundred to two hundred dollars on an appendectomy, because he has been taught that this is necessary.

In the last few months, the various laboratories have been working on an antipneumococcic rabbit serum. The rabbit serum is of much higher potency, and the necessary volume is much smaller. In addition to this, the cost of producing serum by the rabbit method is much less than that of producing horse serum. In all probability, in a short time the refinement of this method will be completed, and we may have available an antipneumococcic rabbit serum in doses of ten to twenty cubic centimeters at a cost much less than the cost of horse serum. Whether the various states will undertake the distribution of this serum to the indigent remains to be seen. In New York City and in Boston there have been attempts to administer this serum to patients without cost, realizing that the expense of the treatment of pneumonia is high in itself and that the mortality rate is tremendous.

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DISCUSSION

DR. K. S. HOWLETT (Franklin): Dr. Gotten has given us a very clear, brief paper on the serum treatment of pneumonia. I feel sure that everyone who has heard his paper is more completely sold on the serum treatment than he ever has been before.

The first thing in his paper that I notice is that he speaks of pneumonia as a self-limited disease, which I am very willing to agree to. It has also appeared to me that pneumonia has always run a very definite course. I do not mean by that that it runs the same number of days, but I do think that even when it is shortened. In my own observation I have seen cases that went through all the different processes that pneumonia usually goes through within three days and we have the crisis on the third or fourth day. For a long time I thought perhaps this was due to not making the diagnosis early enough and the disease had existed longer than I thought, and yet I have become convinced from observation as time has gone on that we do have cases of pneumonia that run a typical course within three or five days.

Dr. Gotten speaks of the death rate remaining practically the same until recently. Somehow or other it strikes me from my own observation, which extends back over so many years, that I have become convinced that pneumonia is much less fatal even without the serum treatment in recent years than it was before. The fact that we have learned the advantage of general treatment, of fresh air, of quietude, and of the general management of the cases has undoubtedly reduced the death rate over what it was several years ago.

The doctor speaks also of the death rate among negroes. In the paper that he very kindly sent me he spoke as if the death rate were practically the same. I think in his talk and in his slides he has shown that it is different. From my own observation I would be very much inclined to believe that not only the incidence but the death rate among negroes is very much higher than it is among the whites, and I am sure that I have seen statistics from his own city of Memphis in which they gave that as one of the excuses for the high death rate from pneumonia in Memphis—because of the large colored population.

In the paper he furnished me he also says that the incidence among white males is two and a half times that among females, while the death rate is slightly higher. That is rather hard to explain. You just cannot understand why males should have that large a percentage over females in incidence, or why the death rate should be higher. I should be glad to have Dr. Gotten discuss that in his closing remarks.

He mentions the fact in his paper that the average day on which the patient entered the John Gaston Hospital was the fifth, and that sometimes they lived only twenty-four hours after they entered the hospital. That is one trouble that we are up against in general practice. In these days of depression when people are trying to save even on doctors' bills, we are frequently not called to see cases of pneumonia as early as we would like. They postpone calling us, hoping that it is not pneumonia, and so we do not often see the cases early, especially on the first day. Of course when the patient has a chill and a high temperature and seems to be seriously ill from the beginning, we are likely to be called, but it is true in my own work that the majority of cases are not seen in the first twenty-four hours.

In my work in Williamson County we have not had an opportunity to have cases typed until within the last year, and for that reason, although many of us have felt we wanted to use the serum because of the favorable reports coming out in the various medical magazines and medical publications, we could not get the cases typed as we can now. Within the last year we have had arrangements made with the health unit in Franklin County to type them for us, and also the private physician has arranged matters so that he can type his cases.

DR. H. B. GOTTEN (closing): When we give a large group of statistics of this kind, it is oftentimes confusing to follow the figures. The figures that we have gathered represent those obtained in various localities throughout the country. Some authors will report a series in which the mortality rate and the incidence of occurrence among the white people will be a certain figure and for the negroes, so much; another writer will report a series that will vary considerably. We know that the mortality rate and also the incidence of pneumonia vary considerably from year to year. Most of the statistics I was able to examine show that the incidence or occurrence of pneumonia is about equal among the whites and the negroes, although this can certainly be controverted by someone else's statistics. The mortality rate among the negroes is certainly a great deal higher.

As to the more frequent occurrence of pneumonia in men than in women, I know of no way to explain it unless we say that the exposure, hazardous types of work, and the exhaustive states that men experience frequently account for it.

I wish to thank Dr. Howlett for his very generous discussion.

BLACK WIDOW SPIDER BITES*

Henry T. Kirby-Smith, M.D., Winchester

MY SUBJECT today is something that should interest all physicians, more especially those practicing in rural areas and surgeons. It is a fairly common disease and I feel sure that it has been overlooked quite frequently in the past. It is a condition that requires immediate treatment. Although very rarely fatal, it gives the appearance of a desperate condition. The pain of a ruptured peptic ulcer, kidney stone, a severe burn or an acute coronary occlusion cannot be compared with it in severity.

The bite of the black widow spider, latrodectus mactans, is not an unusual occurrence. In fact, it is quite common. Last summer I saw four cases, three of my own and one of my associate's, Dr. Parker Smith. With my first case I was struck by the severity of the pain and the lack of relief afforded by morphine and the barbiturates, although both were given in large doses. Becoming interested in the subject I found that previous workers in this field advocated the use of certain drugs which have proved very efficacious.

The black widow spider is the only poisonous spider in this section of the country. It is very easily recognized, being of a glistening black color with a dark red hourglass marking on its ventral surface. The immature spiders have in addition three red dots on their backs which disappear as maturity is reached. There is no other spider at all similar in appearance. If you see a black spider with a red marking on its body you can be sure it is poisonous. It is the female of the species that is dangerous. The male, being without poisonous properties, is smaller and is mottled in appearance. The adult female has a leg span of one and one-half to two inches long and one and one-half to one and three-quarters inches lateral spread.

These spiders have been found in nearly every state in the Union and their range extends down through Mexico, Central America, and the West Coast of South America almost to Cape Horn. As a general rule, they are not inhabitants of wooded areas and are not found in bushes, shrubs, and grass, which is the common habitat of the harmless varieties. They prefer dry and usually dimly lit places. They are most commonly found under stones, woodpiles, in tin cans, and in outhouses and cellars. I believe that with a thorough search one or more can be found around any house in rural Middle Tennessee. Last summer my next-door neighbor discovered 160, most of them being in woodpiles and under bricks and stones and all were found in the immediate vicinity of his house. This winter when I thought of giving this paper I wanted some live specimens to present as a demonstration. I looked in my neighbor's cellar and found several nice specimens which we left undisturbed until a few days ago. Only three weeks ago a workman cleaning up a few loose brick in front of my house found three beautiful specimens. To go still further, six years ago while an interne in Vanderbilt Hospital, I found one in the radiator at the head of my bed which I believe I showed to Dr. Youmans. Thus apparently they are very common. It is surprising that more people are not bitten. I believe the reason is that the black widow is at heart a coward. When found under a rock or board she immediately tries to hide or plays dead. If disturbed with a stick she does not offer to fight or bite. If one is disturbed in her web she immediately runs away. All of my four cases of spider bites occurred at night. Three were in a privy and one fell down inside a man's shirt while he was working. It is probable that at night when their webs are disturbed and they are unable to see they attack, thinking that a bug has been snared.

The black widow does not sting but bites. Its venom is contained in two pouches at the base of its fangs and is transmitted to the tip of the fangs by a small duct. In the ordinary course of events this poison is used to paralyze insects which have been caught in the webs.

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*Read before the Tennessee State Medical Association, Nashville, April 12, 13, 14, 1938.

A further distinguishing characteristic of the spider is its web. It has none of the beautiful patterns which show up so strikingly in early morning in the woods, but is a coarse, irregular, tough web, usually built in a corner, and has an ill-defined tunnel hiding area.

The black widow is very prolific, raising one or two broods a year and laying one hundred to six hundred eggs in a sac. It takes approximately twenty-five days for these eggs to hatch and several months for the young to reach maturity, the time depending on food and weather conditions.

The black widow is a cannibal and will devour other females and males of the species. It is from this fact that she derives her name.

The majority of the reported cases of this spider bite have come from California where in one hospital more than two hundred cases were seen during a period of a few years. In many other states cases have been reported, but of course the numbers are probably only a fraction of the actual number bitten. Some may question the toxicity of this spider, but if one reads the account of Dr. Blair of the University of Virginia who deliberately let one bite him on the finger, all doubt is removed. Dr. Blair was sick for over two days and at times felt as if he were going to die. The commonest site for the bite is on the penis. At first this seems unusual, but when one considers that black widow spiders are commonly found in privies the reason is apparent.

The severity of the symptoms following the spider bite will vary according to the susceptibility to the poison, the site and depth of the bite, the amount of toxin injected, and the age and general physical condition of the patient. The usual course of events following a bite are as follows: The bite itself is described as being like the sting of a wasp or a bee. There is then an interval of about a half-hour or more, during which time the patient is fairly comfortable. He then begins to complain of a dull cramping pain in the muscles, usually beginning in the muscle groups nearest the site of the bite and increasing in severity and spreading to adjoining areas. If the bite is on the genitalia the cramping will start in the hips, spreading down into the thighs and into the abdomen, later extending into the back and lower chest. If the bite is on the hand the arm, shoulder, chest, and abdomen are successively involved. As the pain spreads the patient becomes more restless. He is unable to remain still and cries out with pain. Respiration is very difficult because of the pain in the chest. There may or may not be vomiting. Other physical findings are usually negative. The blood pressure remains unchanged or is slightly elevated. The urine, white blood count, and differential are usually normal. The cerebrospinal pressure may be slightly elevated. The pain is not transient, but lasts for several hours and may continue for a day or two. After the first sting there is no pain or local swelling at the site of the bite. The pain is characteristically little relieved by morphine. If no history of a bite is obtained such conditions as ruptured peptic ulcer, acute appendicitis, acute pancreatitis or coronary occlusion may be diagnosed and in several instances operations have been performed following such mistaken diagnoses. One characteristic point, brought out by Dr. Barney Brooks, is that, although there is great abdominal pain and rigidity, the abdominal muscles move well with respiration.

In addition to the several analgesics various methods of treatment have been advocated such as immune serum, hot baths, and spinal puncture, but these have not proved uniformly successful. The most satisfactory treatments as indicated in the literature are the use of magnesium sulphate and calcium gluconate. Twenty cubic centimeters of ten per cent solution of magnesium sulphate is given intravenously and repeated as necessary. This is said to relieve the pain completely in from three to five hours. The calcium gluconate is given intravenously using ten cubic centimeters of a ten per cent solution and repeating as needed. My own experience is limited to the use of calcium gluconate and in the one case in which it was given the rapidity of relief was astonishing.

CASE REPORT

The following case is, I believe, unusual in that the patient was bitten on two separate occasions under identical circumstances. He was a seventy-eight-year-old white man whom I saw first on the twenty-second of June last year. An hour and a half before my arrival while sitting in a privy in his back yard he experienced a sensation like the sting of a wasp on the end of his penis. He went to bed and about a half-hour later began to have severe cramping pains in his thighs which later spread into his abdomen, hips, and chest. When first seen he was sitting in bed unable to remain still and complaining of severe pains. Physical examination was negative and there was no swelling or any evidence of a sting or a bite on the penis. The white blood count, urine, and differential count were normal. Considering the severity of his pain his pulse was rather slow, being eighty. Examination of the privy revealed many characteristic black widow webs and one large adult spider was found. The patient was given one-fourth grain morphine and one and one-half grain amytal. This afforded so little relief that a short time later the morphine was repeated. He spent a restless night and the next morning, twelve hours after the bite, he was still having pain in his hips, back, thighs, and abdomen. During the night he had taken an additional one-half grain of morphine by mouth. The following day he still had some cramping pains which subsided on the third day.

Six weeks later I was again called to see the same patient and found that he had been bitten a second time. The bite had occurred on the same site under the same circumstances, although the privy had been cleaned in the meantime. The patient commented that on the second occasion the sensation was more like a nibble than a bite. Following the second bite the onset of pain was longer, an hour elapsing between the time of the bite and the first pains. These pains were equally as severe as those following the first bite. He was given morphine, one-fourth grain, and ten cubic centimeters of ten per cent calcium gluconate. Within five minutes after receiving the calcium he felt much better and, although, there was a slight recurrence of pain during the night, he was able to sleep fairly well and was reasonably comfortable the following day.

In this case it is interesting to speculate on the reason for the more rapid subsidence of pain following the second bite. This may have been attributable to an immunity built up as a result of the first bite or to the fact that less toxin was injected as indicated by the milder sensation of the bite itself or to the treatment employed. It is my opinon that the use of calcium gluconate was the major factor in this case. I base this on the fact that cramping pain in the second episode was equally severe as that in the first and was almost immediately relieved by the medication. I feel that the use of immune serum as advocated by some can hardly be expected to yield satisfactory results, for in this case there was certainly no evidence that much immunity will be built up by one spider bite.

SUMMARY

In summary there are four points I would like to make:

1. Black widow spiders are very common.
2. Bites by a black widow spider are common, but do not occur as frequently as might be expected from the large numbers of spiders to be found.
3. Bites of the black widow spider can cause severe symptoms.
4. Proper treatment can relieve symptoms rapidly.

DISCUSSION

DR. JOE B. WRIGHT (Lynnville): Mr. Chairman and Friends: I wish to thank Dr. Kirby-Smith for his interesting and instructive paper. My experience with the black widow spider has been somewhat different from that of Dr. Kirby-Smith's, in that his bites all occurred at night. I have had five cases and they all happened in the daytime. His have been in and about houses. Four of mine were in the open fields and one in a privy. In the first case, a man was working for the railroad and was bitten on the shoulder. In the second case the man was at a sawmill and was bitten on the foot. In the third case he was cleaning out a fence row of a zigzag rail fence and was bitten on the hip. In the fourth case the man was baling hay and was bitten on the foot. In the fifth case, a man was in a latrine and, as in three of Dr. Kirby-Smith's cases, was bitten on the penis.

I mention these cases to bring out the fact that the black widow spider can be found almost anywhere, and there are just as many cases, in my experience, found in the open as about houses.

Dr. Kirby-Smith has graphically described the symptoms that we have in the black widow spider bite. He mentioned that there might or might not be vomiting. In three of the cases that I had, nausea was present. Dizziness was present in four cases. The man who was working in the fields cleaning out the fence row was only about 300 yards from his home. He thought a briar had stuck him in the side or on the hip and did not pay much attention to it until he began to ache. He started home, and by the time he reached his home he told me that he was reeling like a drunken man.

Delirium is another symptom. In three of the cases that I had it was present, and in two of them it was a late symptom, coming on from ten to twelve hours following the bite. In one case the patient was delirious when he was brought into the office some two or three hours after he was bitten.

Profuse sweating was present in all cases, and pronounced weakness which might be designated as shock.

Extreme thirst was present in two of the five cases. The patient could not get enough water.

After the acute symptoms subside there is a general weakness and loss of weight.

The period of convalescence may vary from two weeks to three months.

I differ with Dr. Kirby-Smith in regard to abdominal rigidity. All the cases that I have seen have had abdominal rigidity.

In calcium gluconate Dr. Kirby-Smith has given us something new and effective in the treatment of the pain in black widow spider bite. As he stated, not many cases prove fatal, but every case that I have seen thought he was going to die. The pain is almost unbearable. I used morphine for the relief of this pain, which I agree with Dr. Kirby-Smith is not very satisfactory for immediate relief, and it requires repeated doses. In the last case that I had, in 1936, I gave the patient two cubic centimeters of a fifty per cent solution of magnesium sulphate intramuscularly in addition to the morphine, and the patient was relieved of this pain in about three hours.

There is one treatment not mentioned by Dr. Kirby-Smith that has been used, and that is blood transfusion, which is not practical except in hospitals.

DR. JOHN B. YOUMANS (Nashville): Dr. Kirby-Smith's experience with the black widow spider at the head of his bed reminds me of my own, which will add additional evidence to the frequency of the occurrence of the spider in places where you would not think it would be. I had just seen my first case of black widow spider bite and had gone to the laboratory and was congratulating myself that my environment was probably not such that I would meet with one, when I looked at the window and there, crawling down the screen, was a black widow spider.

Dr. Kirby-Smith has very well presented the essential features of this illness. There are, first, the necessity to avoid a mistaken diagnosis, that is mistaking it for a more serious condition, usually surgical, which might lead to needless operative intervention and, second, the relief of suffering.

The important things with regard to diagnosis are, first, to keep in mind the possibility and, second, to try to obtain a history of the bite. If these two things are done, one will have little difficulty, in most cases, with the diagnosis, because with that information other data from the patient will usually suffice to make the diagnosis. For example, the absence of fever and leukocytosis, the normal or slightly elevated blood pressure in contrast to the drop in blood pressure in coronary occlusion, the absence of cardiac irregularities, the previous history of the patient, particularly in case of suspected rupture of a peptic ulcer, with a history of a bite, will make a mistake much less likely.

The second point is the relief of suffering. Both speakers have referred to the severity of the pain. I do not need to enlarge upon that. It seems quite clear that calcium gluconate will give greater relief than morphine, and I would prefer it to magnesium sulphate intravenously, because the latter is not without danger on its own account. One can run into accidents with the use of magnesium sulphate intravenously.

I should also like to agree with Dr. Wright in regard to his objection about the soft abdomen. In the cases I have seen the abdomen has been rigid, hard, suggesting the abdomen of a generalized peritonitis. I do not know that that is always the case, but it is in many cases.

I think by the use of calcium gluconate one may be enabled to shorten the convalescence and shorten the weakness and disability which may follow this disease.

A few years ago Dr. Meleney at Vanderbilt University Hospital made some interesting experiments with these spiders. He dissected the poison sacs and injected the venom into some rats, without any effect whatever. He then ground up the egg mass and injected it into kittens and rats. The kittens died immediately and the rats in a short while. What the difference is has not been explained, and why the rats did not die from the venom or show symptoms of poisoning is not clear. Perhaps there is a species difference.

Finally, I should like to add that apparently in some cases there may be hemorrhagic manifestations. At least in one child which we saw there were hemorrhagic features, and it was probable, most probable, that the child had been bitten by a black widow spider.

I should like to congratulate Dr. Kirby-Smith for his presentation.

DR. L. C. JOHNSON (Woodstock): Mr. President and Members of the State Medical Society: I have had the experience (it was not such a pleasant one) of treating four cases of black widow spider bite. Three of these spiders were found in what we know as a sanitary toilet just underneath the ledge. Three of these patients were men, and all were bitten on the genitalia, as was spoken of by the essayist. I found these patients rigid not only in one part of their body, but from head to foot, and they walked almost like a "jakeleg"—they could not get straight.

I treated the first two cases with morphine and hyoscine and external heat. The latter two I handled with the same treatment of analgesics, morphine, and atropine, plus magnesium sulphate intravenous, and in spite of all this I was at least two hours in giving them relief.

One of these patients whom I had had under my care for a number of months was pregnant, in the eighth month. About three o'clock in the morning I was called to see her. Expecting that something had gone wrong, I took all the paraphernalia I thought I would need. When I arrived, I found her pain was largely in the left arm and chest and neck, in fact, some pain all over. After placing my hand on the abdomen and waiting for the regular rhythmical pain and contractions, I failed to find them. Then I began to get a history. Finally she said, "'I think something bit me on the little finger of the left hand." I went back to the bed and made a search, and I found the intruder (a black widow) under the cover that had bitten her on the finger. Then, of course, the routine treatment was started, and after a few hours she was relieved and I was relieved also.

We do not have as many black widows over in Shelby as one might imagine, but we do have them. I am going to tell this incident and I will try to phrase it in a way that everybody will appreciate it and not become offended. In the second case, the man who thought he would avoid being bitten a second time, he abandoned his sanitary toilet. He resorted to his old open toilet, and one morning about seven or eight o'clock I was called again hurriedly to see this patient. He said he had been bitten a second time. But I did not find the rigidity or usual symptoms. I found the man very, very excited and on examination, right on the bottom of the scrotum, I found where he had been pecked by a rooster. I assured him he was all right and he would soon be over his excitement. There is one characteristic of the black widow which might be of interest to you. After copulation she immediately turns on her mate, kills him and eats.

DR. HENRY T. KIRBY-SMITH (closing): I want to thank these gentlemen for their kindness in discussing this paper.

In answer to the question about the abdomen, the cases I have seen have had a relatively soft abdomen, considering the severity of the pain. I will have to keep an eye out to see how it happens in the future.

I am glad that Dr. Wright brought up the point that these spiders can be found anywhere. I found them around houses; he finds them out in the open country. Look out for them any place you go.

TREATMENT OF EMPYEMA: TIDAL IRRIGATION*

Gene H. Kistler, M.D., Chattanooga

EMPYEMA IS a relatively common condition and always has drawn much attention from both internists and surgeons. All are vitally concerned, for it is a condition consequent to many diseases and injuries. Surgeons, particularly, are interested because empyema has a relatively high mortality rate; the type of treatment employed affects markedly the morbidity and mortality and also because no one method of treatment ever has been accepted universally. The literature is replete with conjecture and variety of opinion concerning these and the many complications, causes, and forms of empyema. This confusion precludes the facts that empyema is a complex disease, difficult to cure, and that it should be treated by the best modern methods according to established principles.

Many methods have been devised fo treating empyema. The same surgeon may use several methods or modifications depending upon the attending circumstances of any particular case. Among these methods are: repeated aspiration, aspiration and air replacement, open drainage, closed intercostal drainage, open drainage with flap valve, and rib resection with closed drainage. Attending these are many procedures for irrigation of the cavity and mechanical devices for recording and regulating amounts of flow and pressure of fluids involved. Many solutions, such as normal saline, Dakin's, boric acid, and others are used to irrigate the cavity. Even sulfanilamide has been advocated. In order to obtain the best results with any procedure it must afford good drainage, directly or indirectly sterilize the cavity and obliterate the pleural space by re-expansion of the lung. It follows that the most efficient and desirable method of treatment is the one that accomplishes these in the least time, and with least possible risk to the life of the patient and the one with the fewest complications and sequelae.

By the term "empyema," as employed here, is meant the common simple pyogenic type. Obviously, the etiologic organism or organisms, the character of the exudate, the age of the patient, the duration of the disease and other factors are important in any particular case. These are well appreciated, but this discussion by necessity is limited.

The object here is to bring before you and emphasize the principles involved and procedure of what I believe to be the best modern treatment of simple pyogenic empyema, namely, the "tidal irrigation" method. No claim is made for originality though several recent modifications of the original are emphasized. Empyema is so common and of such importance that it should receive more thought and many of the older methods still used should be discarded. Though constant suction treatment and the tidal aspect of irrigation were described ten years ago, they have not become popular as they should be, consequently not employed befitting their usefulness.

The theory of tidal irrigation of the chest cavity is based upon the ebb and flow of an irrigating solution produced by respiratory movements of the chest wall plus mild constant suction. The negative pressure of inspiration draws fluid into the thorax. The positive pressure of expiration expels it. The amounts of these pressures are near normal, hence there is little disturbance to the mediastinum and thoracic viscerae. Thus, there is continuous free communication between the exudate of the cavity and the irrigating solution outside, both maintained in a closed system under conditions simulating an intact chest wall. This precludes the necessity of a large tube free of fibrin clots or other obstruction. It is appreciated that the pleural cavity may be large and that the interchange of fluids is relatively small, but the continuous interchange, though small, rapidly changes the character of the exudate when maintained for a few days. By applying this principle it is not necessary that drainage be dependent and the tube may be placed where it will be most comfortable to the patient and convenient for connection to the irrigating system.

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*Read before the Tennessee State Medical Association, Nashville, April 12, 13, 14, 1938.

The tidal method is not designed to sterilize the cavity except by the natural process of constant irrigation drainage and utilization of the mechanics of respiration in obliterating a pleural space. Often Dakin's, boric acid, and other solutions are used to hasten the dissolution of fibrin and coagulated exudate. But, in my opinion, normal saline serves equally well except in the more chronic cavities with thick pyogenic membrane walls. The more irritating solutions are more apt to excite cough and other reflexes and to produce bronchial fistulae. The method is one of drainage and irrigation, not chemical sterilization. In addition to the constant ebb and flow of the irrigating solution, the arrangement is such that when desirable the outflow tube may be clamped and a quantity of irrigating fluid allowed to run into the cavity at one time. This is done at regular intervals by some and is particularly useful the first two or three days in flushing out the exudate and debris that settle out during periods of quiet, as in sleep. Another maneuver often useful in maintaining wide passage through the tube in the chest and for evacuating large fibrin clots is simply digital alternate compression and release of the drain tube with inflow and outflow tubes clamped.

Technic of Tidal Irrigation

When first advocated, the apparatus necessary for tidal irrigation was very complex. It embodied the use of various bottles, intricate tube connections, manometers, etc. Several modifications of the earlier apparatus have been made, some useful, others also unnecessarily complicated. Today the apparatus used is simple and reliable though the essentials are the same.

Tidal irrigation is a closed method. If one appreciates the mechanical principles of the "tide phenomenon" plus mild pressure siphonage, it is easy to arrange and maintain function in the irrigation system. The entire setup can be made from a Wangensteen gastric siphonage or a constant intravenous drip outfit, equipment for general use in any hospital. The question of rib segment resection or intercostal thoracotomy always attracts comment and opinions vary a great deal on their relative advantages and disadvantages. In my opinion, it is better to resect a segment of rib because it is necessary to use a large tube to insure constant free communication with the irrigating fluid. This tube should be semirigid rubber and three-eighths to one-half inch inside diameter. The location selected for placing the tube should be one most convenient to the attendants and most comfortable to the patient for dependent drainage, though desirable, is not necessary. With infiltration anesthesia a small segment of the seventh, eighth, or ninth rib is resected in the midaxillary line. The periosteum is disturbed as little as possible. With a syringe and needle the cavity is punctured and partially decompressed in order to facilitate placing the tube and to prevent contamination of the wound. The tube, clamped at its outer end, is then quickly put in place through a small incision in the posterior periosteum of the rib and underlying pleura. This is done with negligible period of open pneumothorax and with little or no contamination of the wound. The tube is beveled slightly at the tip, has no side apertures and is projected into the cavity only one to two centimeters. The intercostal muscles and skin are closed snugly about the tube, which is held fixed by one of the skin sutures.

There seems always to have been difficulty in preventing leak around the tube, thus losing the closed feature. This eventually results in true open drainage or second operation for more efficient closed drainage. Certainly much of this failure has been due to too small a tube and or plugging of the tube. Among the materials advocated for sealing the skin about the tube are special devices, adhesive straps, buttons, rubber dam, muscle flap and the flanged end of a mushroom catheter. In my experience the use of sponge rubber has practically eliminated this difficulty. It is not a new procedure, but one not used generally. The tube is put through the sponge which then is placed directly over the wound and held partially compressed by adhesive straps. The sponge maintains constantly pressure on the wound and the tube through its ability to give and take according to the respiratory movements of the chest wall. The patient then is connected with the irrigation apparatus before further decompression of the pleural cavity is allowed.

The irrigation apparatus consists essentially of a suspended reservoir bottle and a drainage bottle connected by a glass "T" tube. The third arm of the "T" tube connects these two with the tube in the pleural space. A drip bulb is placed in the inflow tube and the irrigating fluid regulated to twenty-five to forty drops per minute. The drain tube in the chest is short so that there will be little dead space to interfere with interchange of the fluid in the cavity with that of the irrigating system. This is important and should be appreciated more widely. The crossarm portion of the "T" tube is placed in the direction of the outflow tube to facilitate ebb flow and encourage siphonage from the chest. The tip of the outflow tube is immersed so that air is excluded and the system maintained filled with fluid.

Probably the most important single feature of this simple arrangement is the distance between the level of the drain tube and surface of the fluid in the outflow receptacle. This controls the amount of negative pressure in the system producing the siphonage. It should be not more than three to six inches. The importance of this is not generally appreciated and its significance often overlooked. If the drain bottle is more than six inches below the level of the tube in the chest the amount of suction is too great and counteracts the tide phenomenon by too strong siphonage. This tends to obliterate the cavity too rapidly and to draw the visceral pleura against the opening of the tube, thus leaving smaller spaces for chronic empyema. The earlier methods did not consider these matters and consequently the incidence of secondary operations and chronic empyema cavities was higher.

After instituting tidal irrigation the subsequent care necessary is minimal. The rubber sponge on the wound is not disturbed until time for removal of the tube. This is done when the tidal fluid becomes clear or only slightly turbid and the cavity holds but five to fifteen cubic centimeters. This requires but a few days, depending upon the circumstances of the particular case. After three or four days mild respiratory exercises, such as blowing toy balloons, are given to facilitate re-expansion of the lung. It may or may not be necessary to irrigate the residual space with a small catheter for a few days after removal of the tube. The wound heals readily without pain and with but little scar and no deformity of the chest.

SUMMARY

The many variables encountered in pyogenic empyema thoracis and the individual case differences with regard to any treatment are not considered in this brief discussion. The so-called "tidal irrigation" method of treatment is described in detail with the hope that it may be popularized befitting its usefulness. It is a safe, simple, reliable method based upon sound mechanical and physiologic principles readily applicable to most cases of pyogenic empyema. The mortality rate, morbidity, and incidence of complications following this are considerable less than with the other methods now employed. The apparatus necessary for its use is simple and easily arranged.

DISCUSSION

DR. MURRAY B. DAVIS (Nashville): Mr. President and Gentlemen: I have listened to Dr. Kistler's paper with a great deal of interest, for the subject of the treatment of empyema, and especially where the closed system of drainage is used, is one that has always had a particular attraction for me.

In 1933 I reported a small series of acute empyema in children before this society, and advocated the closed method of drainage. At that time I had not used the tidal irrigation method of treatment. Then I irrigated the cavities daily with Dakin's solution and maintained continuous suction. This arrangement of Dr. Kistler's certainly simplifies the introduction of irrigating solutions into the pleural cavity, and I feel that it is a distinct aid in the closed method of treatment.

A great deal has been written on the subject of the treatment of empyema, and I am sure that a great deal of what has been written should best be forgotten. The disease has been treated by a bewildering variety of methods and variations, so much so that as one of my friends has said, "We wonder if some of these men are not more interested in mechanics than they are in pathology." Be that as it may, we cannot avoid the fact that there is a remarkable parallel between the mortality of empyema and that the determining factor is the virulence of the microorganisms, as brought out by Graham and Berek.

There is very little in this excellent paper for me to differ with. However, there are two points that I would like to take exception to. Dr. Kistler says that irritating irrigating solutions are liable to produce bronchial fistulae. This has not been my experience. I use Dakin's solution in practically all of my cases, and I believe that bronchial fistulae are caused by cortical abscesses communicating with a bronchus that ruptures free into the pleural cavity, rather than from any type of irrigating solution.

He also gives me the impression that his cases are cured within a few days. Now I will grant you that there are exceptional cases that will clear up almost miraculously. I have had one child with pneumococcic empyema that was completely cured, and remained so, with only one aspiration, but the majority of my cases are not cured within a few days, but rather within a few weeks.

There is only one rule as to when to stop the drainage, and that is when the empyema cavity has been obliterated. The improvement of the general condition of the patient, the clearing up of the empyema contents, and the obtaining of a negative culture are all valuable signs, but no matter how sterile the fluid may be, if the cavity is not obliterated, the removal of the tube will be followed in a high per cent of cases by a recurrence of the empyema.

However, these are very minor points of difference. Dr. Kistler has given this society a very excellent presentation and has conformed to the basic rules for the treatment of this disease. They are, according to the Army Empyema Commission and the empiric observation of Hippocrates:

1. That operation should not be performed too early.
2. That rapid evacuation of the pus is often fatal.
3. That the wound must be kept open until the infection has subsided.

DR. GENE H. KISTLER (closing): Thank you, Dr. Davis, not so much for your discussion, but because of your criticism.

I referred to the irritating solutions. By that I meant other things being equal with the skin and pleura or with the cortical abscess, I believe that some solutions are more apt to cause fistulae than others.

As to my quick cures, I am not offering anything fancy, and perhaps that is a little stretched. I would rather wait until a later date to report upon them.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
Devoted to the Interests of the Medical Profession of Tennessee
Office of Publication, 508 Doctors Bldg., Nashville, Tenn.

Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 15, 1932.

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H. H. SHOULDERS, M.D., Editor and Secretary

SEPTEMBER, 1938

EDITORIAL

The Public Health, Individual Health, and Indigency

The term "public health" is so loosely used at the present time that it conveys no accurate meaning. For this reason much literature on the subject of public health has created a great deal of confusion in the public mind as to what it really means.

Public health is one thing, and individual health is another thing.

A public health problem is one type of problem. An individual health problem is another. There is really no ground for conflict between the two. To the contrary, each should supplement the other to the great advantage of the public.

The terms *preventive medicine* and *curative medicine* are used in such a way as to convey no accurate meaning. The impression is created that private practitioners do not practice preventive medicine. This is not true.

Medicine embraces both curative and preventive medicine. Practitioners of medicine practice both in the routine of an everyday practice. For example, a physician in a home may treat one child for influenza and on the same visit vaccinate another against a contagious disease. The practitioner may treat a patient for an illness in the home and give directions which may prevent other members of the same household from contracting the same disease. By such steps both preventive and curative medicine are practiced at the same time by the family physician. Much of the reduction in the death rate in the United States is attributable to this very practice.

Curative medicine, broadly speaking, seeks to restore health and prevent death. In a sense all medicine is preventive in that it seeks to prevent death and disability. This is true regardless of whether the condition is a broken leg, diabetes, pneumonia, or any other condition, contagious or noncontagious.

An accurate concept of the meaning of public health may be conveyed more easily by illustration than by a long tedious definition.

Public health has been developed by an evolutionary process. As science progressed, the knowledge of the processes by which diseases are transmitted has been revealed, and by the same process made possible and necessary the use of preventive measures by a department of the state government. For example, when it was learned that typhoid fever was transmitted by an impure water supply, it became possible to prevent typhoid fever by the purification of the water supply. This step of making pure a public water supply required the use of the powers vested in government.

When it was learned that certain diseases are contagious, the control of such diseases required the isolation of the afflicted person under quarantine regulations. This required the use of the executive force vested in the government. When it was discovered that many environmental conditions such as unsanitary conditions contribute to the prevalence of diseases, then this discovery made possible the prevention of illness by the correction of faulty environmental conditions. To correct the faulty environmental conditions, however, requires the use of executive forces vested in a governmental agency.

An individual cannot correct the faulty environmental conditions of a neighbor, even though the conditions may be dangerous to the community. An individual citizen cannot quarantine another, nor can an individual enforce regulations as to the purity of food and water. These are of necessity public health problems because they require the use of powers vested in government.

A public health problem is one which requires the use of executive force to accomplish its solution.

An individual health problem is one which constitutes no hazard to the public and is amenable to individual effort. A diseased tonsil is an individual health problem. It constitutes no hazard to the public and is amenable to individual effort. No executive force is necessary to accomplish the correction. This same statement is true with regard to any number of conditions.

The question of indigency enters this field to create confusion also.

An individual may have an individual health problem, which requires individual medical services, for which services the individual is not able to pay. This is a problem of medical indigency. It is in no sense a public health problem.

It is necessary that one bear in mind a clear distinction between: (a) public health, (b) individual health, and (c) medical indigency. There are public health problems, individual health problems, and in addition the problem of the indigent.

There are public health departments, national, state, county, and municipal, created and empowered to deal with public health problems. We have individual practitioners to deal with individual health problems, and we have agencies to deal with the problem of indigency, whether the problem relates to food, clothing, shelter, or medical attention.

When a public health department leaves the domain of public health, in which it is equipped to operate with the greatest efficiency, and undertakes to operate in the field of individual health where its knowledge is extremely limited, a great deal of confusion and very little good ever comes of it except at times some political good will for the department.

As yet there are too many sanitary problems in America crying out for solution to warrant any public health agency in dividing its time between public health problems and individual health problems on any ground. When this is done, the public health department falls down and fails to accomplish the purposes for which it is created, and accomplishes less good in a field already adequately covered and for which it is not adapted and not trained.

One doctor simply cannot be an authority in the field of public health and at the same time an authority in the field of individual health. It is, therefore, proper for the public to consider the propriety of demanding that the governmental agencies created and financed for the purpose of dealing with public health problems remain in that field. Their training in no way fits them to deal with the individual health problems that arise, regardless of whether they arise in an indigent person or one who is not indigent. If they transgress on the field of individual medicine on account of indigency the indigent receive poor attention and the public as a whole fails to receive adequate public health protection.

When a public health department deals with an individual health problem, because the problem has arisen in an indigent person, then the public health department becomes a *charity agency* and not a *public health agency.*

The problem of indigency is one thing, and the problem of public health is another thing. An individual health problem in an indigent person should be considered and dealt with on the basis of medical indigency by the personnel accustomed to dealing with such problems.

If each of these problems is approached with these distinctions clear in mind, much of the confusion that is in existence today will be cleared away at once. The taxpayers will be saved, and the idea of individual Americanism preserved.

The medical profession has sponsored much of the legislation on the statute books of the various states designed to promote the public health. We cooperate wholeheartedly in carrying forward the proper programs in the interest of the public health. We are generous with our services to the indigent.

When the public health department leaves unsolved problems in the field of public health and tackles problems connected with individual health, limitless confusion results. We doctors are opposed to such misguided effort. It is expensive, it does harm and little good, regardless of wild claims to the contrary.

STATE MEDICINE

It is now appropriate to consider what state medicine really is.

Many people are misled into believing that state medicine is one thing. They learn later, too late, it is another thing. They are led to believe it is a system of practice in which the taxpayers pay the costs and government agents see to it that the people get the care.

As a matter of fact, state medicine in all its forms narrows down to this: It is a system of practice in which the state pays for medical services, but patients and doctors, both, lose their liberties in whole or in part.

In complete state medicine the patient has no more liberties in choosing his doctor than does the private soldier in the army, nor has the doctor his freedom of judgment.

At times, state medicine is given the name "health insurance." Of course, it is not health insurance. Under such a system premiums are collected from employers and employees in the form of taxes just as other taxes. Thus a large fund is created to be administered by an administrative agency, board or person. In turn, those who pay premiums are entitled to certain benefits in the form of medical and hospital care, but they must accept the care that is offered and under the condition and regulations established by the agency.

The doctors who work under the plan must accept all the terms and conditions made. He has the liberty of working under the conditions or not working at all.

A certain degree of deception is written into such laws. The deception is in the statement that the patient is given the liberty of choosing any one of a number of doctors who have complied with the regulations of the administrators when a panel system is provided for.

Such a statement is deceptive for the reason that both the doctor and the patient must have complied with the regulation of the administrator. The power to make regulations is vested in the administrator, which means also the power to change them. All except the appearance of liberty is destroyed.

This subject had its beginning more than fifty years ago in Germany. The original law has been amended again and again. There the experience has been a great multiplication in the cost of administration without any demonstrable improvement in the welfare of the people from a health standpoint.

In England the insurance plan in effect applies to a relatively small per cent of the population. It applies to workers in certain income levels. It does not apply to their families. It makes no provision for the indigent and the funds are administered, to some extent, by local societies.

In Russia is found a system of complete state medicine in so far as certain areas are concerned.

At this point it might be appropriate to recite an incident which illustrates the point at issue.

Some two months ago a professor in Nashville sent to the writer a marked copy of the *Yale Review*. Attention was drawn to an article which dealt with the subject of state medicine, and in particular with the system of practice in Russia.

The article was written by a professor in a large university who happens to be a communist and conducts tours to Russia. He was not born in the United States.

In the article he lauded very highly state medicine as practiced in Russia at the present time.

The Nashville Banner on the same afternoon carried a story of a Russian doctor who was being prosecuted for having committed a crime. He was charged with the crime of poisoning a politician whom the higher politician wished to get rid of. The doctor accomplished the purposes that the administrator desired, viz., the poisoning by degrees of the politician the administrator wished to destroy.

At the trial the doctor admitted his guilt. He was given clemency, according to the story, and did not lose his head.

It is supposed the clemency was extended for the logical reason that he lived up to the regulations of the department with diligence and effectiveness. He observed the orders of his superiors, even though it involved the deliberate destruction of a life by medical means and under the guise of medical care.

This serves as an instance to illustrate the point. If a doctor cannot be free to exercise his medical judgment, there can be no freedom in medicine.

The instance above recited is an extreme instance, of course, but a logical terminal instance of the operation of any such a system where doctors must be subservient to an administrative agency instead of their patients.

In considering the question of state medicine, the American people are confronted with one issue only—the issue is whether liberty and democracy with all of its faults and virtues is preferable to autocracy with all its faults and virtues. There can be no halfway ground. That is the issue.

Very recently there was held in Washington a conference in which it was seriously proposed that the federal government appropriate large sums of money to be turned over to some federal agency to be spent for medical care in one way and another. Some federal agency, of course, would be empowered to allocate the funds to local institutions and agencies.

The federal agency with power to allocate funds would, of course, make regulations with which local agencies must comply in order to receive any benefits.

This proposal, it will be noted, is made in the name of welfare.

The trick in the proposal is an administrative agency in Washington endowed with powers to make the regulations as to who gets the money and the terms and conditions under which they get it.

This particular phase of the program suggested has all the earmarks of a Russian system, even though it does not apply to all the people. Again it appears to be communism "by degrees."

It is not necessary to get out of the State of Tennessee to learn exactly how such a system operates.

In 1934 when the Federal Relief Administration was set up and large sums of money appropriated for its use, a system was set up to administer a certain amount of medical care to those on relief rolls.

The regulation never did provide for complete medical care at any time, anywhere.

The system, in brief, was as follows: When a member of a family of a relief client required medical services, the client was required to call the Relief Administrator of the county first; then a person, designated as a case worker, would go to the family for the purpose of determining *whether the services of a doctor* were needed. If the case worker decided services were not needed, services were not authorized.

If the case worker decided that medical services were needed, a doctor was authorized to make as many as two visits, and no more, without further authorization. If the doctor and patient should decide further services were needed, the final determination of the question rested with the case worker who could authorize additional services or deny them.

Such regulations, of course, were repugnant not only to doctors, but to those compelled to accept such dictations at the hands of a so-called "case worker" who had no training in medical care whatsoever, in many instances, and could not determine whether services were needed or not.

In this connection, it is worth remembering too that more relief money was spent by relief agencies for welfare in the year 1936 than was ever handled by any governmental agency for welfare purposes before.

In the year 1936 the United States had a higher general death rate than in any of the six previous years. To be exact the mortality figures for the year 1930 to 1936, inclusive, were as follows:

DEATH RATE PER 1,000 POPULATION IN THE DEATH REGISTRATION AREA IN CONTINENTAL UNITED STATES*

1930	11.3
1931	11.1
1932	10.9
1933	10.7
1934	11.0
1935	10.9
1936	11.5

It is worth noticing that those who are urging large federal appropriations for medical welfare purposes use evidence to support their claims which, at least, are tinctured with fiction, and shun the one single evidence that is undisputable, viz., the evidence revealed by mortality rates. They use figures which cannot be proven to be true by any legitimate evidence. Anyone can fake an illness. No one can, very well, fake a death and a funeral.

The Interdepartmental Committee reported at length on the facts revealed by a survey made on illness and medical care. These figures as to "serious disabling illness" were compiled in the following way: White collar WPA workers were employed to make a house-to-house canvass. Several questions were asked, among them the following: "Did you have a serious disabling illness in the family in the previous year?" If the informant answered, "Yes," the next question was, "Did you have a doctor?" If the answer was "No," then the question was asked, "Why didn't you have a doctor?" In some instances they got the answer, "Because we could not afford to pay a doctor."

The proof of illness in this case is a statement of a relief client to a relief worker. No doctor diagnosed the illness, not even a case worker apparently was ever informed of the illnesses classed as "serious and disabling" for statistical purposes.

It is logical to ask the question, "Would any insurance company in America pay a benefit on such evidence of illness?" "Would the federal government or any relief agency pay on any such evidence of illness?" "Would any teacher excuse a child from school on such evidence?"

As a matter of fact, the very relief agency set up to administer relief to the poor evidently denied them the medical care which they needed, or else the families did not demand the medical care provided for.

The taxpayers are requested to accept as final and true figures on "serious disabling illness" compiled in such a manner.

It is more than passing strange that those who seek the control of large federal appropriations pass over the one undisputable evidence of serious disabling illness, which is mortality figures, and set up in their stead figures on alleged illness, without medical attention, as a basis to guide taxpayers and legislators in the matter of altering in fundamental fashion the law of the land, and the whole concept of the relationship which should exist between a patient and his doctor, and the relationship of both to the government.

Again one is compelled to state that these proposals do not originate in generous souls who are ready to sacrifice themselves on the altar of the general welfare. They seek power and money. To assume they would use it wisely and well is not justified by any past experience.

Announcement has just been made by Dr. Frank E. Whitacre, instructor for the Postgraduate Program of Obstetrics in Tennessee, that he has accepted the appointment with the Rockefeller Foundation to become professor and head of the Department of Obstetrics and Gynecology of Peiping Union Medical College, Peiping, China. Doctor Whitacre will sail for China immediately upon completion of his contract with the Tennessee State Medical Association which ends December 1 of this year. This is according to advice of Dr. H. H. Shoulders, secretary-editor of the Tennessee State Medical Association.

Doctor Whitacre came to Tennesse two years ago from the University of Chicago medical faculty, where for some years he has served also on the staff of the Chicago Lying-In Hospital. A total of 1,300 physicians in Tennessee have registered and taken his course in obstetrics sponsored by the Tennessee State Medical Association.

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*Vital Statistics—Special Reports, Vol. 5, No. 6, Page 19.

Doctors of Tennessee insisted that he used the most clear, concise method of instruction and demonstration they have ever witnessed among medical teachers. Many Tennessee physicians who have consistently, periodically left their practice and taken postgraduate study in medical centers advise that in their judgment none have equalled the course of Doctor Whitacre in the wealth of practical information furnished physicians of this state.

Besides lecturing to 1,300 physicians of Tennessee thus far, approximately 8,000 women in Tennessee have heard his lay lecture on the subject of "Prenatal Care and Its Effect Upon the Average American Home." Doctor Whitacre's past clinical and teaching connections include the following: Doctor Whitacre graduated from the Medical School at the University of Iowa in 1926; one year rotating internship, University of Illinois Hospitals; resident in obstetrics and gynecology, University of Illinois Hospitals, Chicago, 1928; resident in obstetrics in Chicago Lying-In Hospital, 1929, 1930; resident in gynecology, University of Chicago Clinics, 1931; assistant in obstetrics and gynecology, University of Leipzig; Women's Hospital, Germany, 1932; instructor in obstetrics and in postgraduate teaching, University of Chicago, 1933 and 1934 (promoted to rank of assistant professor); assistant professor, the Institute of Pathology, University of Berlin, Germany, 1935 and to July, 1936 (this was chiefly studying obstetric and gynecologic pathology); at present, assistant professor in obstetrics, University of Chicago, teaching undergraduates and postgraduates.

Doctor Whitacre's family consists of a wife, and a boy one and a half years old. Many physicians of Tennessee will be interested in his future career and wish him well in his new appointment.

The 1939 meeting will be held in Jackson, April 11, 12, 13.

The Madison County Medical Society has selected the New Southern Hotel to be the headquarters.

General sessions will be in the Gold Room.

Commercial exhibits will be on the mezzanine floor and the House of Delegates will hold its sessions downstairs.

Madison County is making very elaborate plans for the entertainment of all of those who come.

Let us keep the dates in mind and make the 1939 meeting the best in the history of the society.

DEATHS

DR. JOHN A. MCCULLOCH

Dr. John A. McCulloch, Maryville; University of Nashville, Medical Department, 1901; aged sixty-three; died suddenly on August 12.

DR. WILLIAM P. MOORE

Dr. William P. Moore, College Grove; Vanderbilt University, Medical Department, 1891; aged sixty-five; died on September 1.

RESOLUTIONS

Dr. B. J. High

On July 31, 1938, the Smith County Medical Society lost its oldest member in the death of Dr. B. J. High, of Elmwood, Tennessee.

Dr. High was born February 24, 1863. He received his medical degree from the University of Tennessee. After graduating in medicine he taught in the public schools of Smith County, later entering actively into the practice of medicine.

Dr. High was, until his health began to fail a few years ago, very industrious, enjoying a large practice. He was greatly interested in organized medicine. He served as secretary of the Smith County Medical Society for almost forty years. His services were so highly appreciated the society presented him with a loving cup shortly before his health failed. He was, in addition to being a member of the Smith County Medical Society, a member in the Tennessee State Medical Society, the Upper Cumberland Medical Society, and the American Medical Association.

Dr. High was ever ready to give helpful advice and encouragement to the younger men in the profession, stressing always the ethical side of medicine.

No one was more useful or rendered greater service to his community and to his profession. In recognition of this the Smith County Medical Society in regular monthly meeting assembled desires to offer the following resolutions:

Be It Resolved, The Smith County Medical Society deeply deplores the passing of our fellow member.

Be It Further Resolved, That the society extends to his wife and relatives our sympathy and condolence; and

Be It Further Resolved, That a copy of this resolution be sent to his wife, a copy be sent to the secretary and editor of the Tennessee State Medical Journal, a copy be sent to the *Carthage Courier,* and a copy be spread upon the records of the society.

(Signed) R. E. Key, M.D.
L. R. Sloan, M.D.
E. D. Gross, M.D.

NEWS NOTES AND COMMENTS

Drs. Lucius E. Burch, John C. Burch, and Henry M. Carney announce the formation of the Burch Clinic, 2112 West End Avenue, Nashville.

Dr. G. M. Rogers announces the removal of his office from LaFollette to Kingsport. Practice limited to eye, ear, nose, and throat.

WOMAN'S AUXILIARY

President—Mrs. H. E. Christenberry, Knoxville
President-elect—Mrs. Matt B. Murfree, Murfreesboro
Press and Publicity—Mrs. W. Frank Fessey, Nashville

A recent and most delightful luncheon was given at the home of Mrs. Joseph Travenick, president of the Woman's Auxiliary to the Nashville Academy of Medicine of Davidson County, with Mrs. Travenick as hostess and members of the board as guests.

A survey of the year's work was made and fully discussed.

Mrs. Albert Hill, of Nashville, commissioner of Girl Scouts, was the principal speaker for the occasion, giving an interesting and detailed report of the wonderful work done in this organization. Mrs. Hill also told of the plan to bring Mrs. Franklin D. Roosevelt to Nashville in October, sponsored by the Girl Scout movement.

MEDICAL SOCIETIES

Davidson County:

The regular meeting was held September 6.

The subject was "Hay Fever," by Dr.

Edna Pennington. Discussed by Dr. C. S. Thomas.

Dyer, Lake, and Crockett Counties:

The Dyer, Lake, and Crockett Counties Medical Society met in regular monthly session September 7, 1938.

Scientific Program—

1. "Ophthalmology for the General Practitioner." Dr. James E. Wilson, Memphis.
2. "The Management of Ureteral Stones." Dr. Sam L. Raines, Memphis.
3. "Suggestions for the Pre-School Child." Dr. Clyde V. Croswell, Memphis.

(Signed) C. L. DENTON, *Secretary.*

Greene County:

The Greene County Medical Society met at the Andrew Johnson Clubhouse, Tuesday, September 6.

Dr. R. S. Cowles presented a paper on "Paratyphoid Fever," which Dr. L. E. Coolidge discussed.

The following members were present, Drs. M. A. Blanton, L. E. Dyer, R. S. Cowles, L. E. Coolidge, N. H. Crews, C. B. Laughlin, R. B. Gibson, Hal Henard, H. W. Fox, and I. E. Phillips.

(Signed) I. E. PHILLIPS, *Secretary.*

Hamilton County:

September 1—"Complications Following Thyroidectomy," by Dr. J. A. Reynolds.

"Indications and Contraindications for Use of Digitalis," by Dr. Fay B. Murphey.

September 8—"Acute Intestinal Obstruction," by Dr. W. D. L. Record.

"Present Status of Treatment of Peptic Ulcer," by Dr. T. Manson.

September 15—"Congenital Hypertrophic Stenosis in Infancy," by Dr. J. B. Haskins.

"Physiology and Surgery of the Sphincter," by Dr. Alex Steward.

Hardin, Lawrence, Lewis, Perry, and Wayne:

The Five-County Medical Society met on August 30 in Waynesboro.

Dr. John M. Lee, Nashville, presented a paper on "Diagnosis and Treatment of Meningococcus Meningitis in Infants." Discussion was led by Dr. T. J. Stockard, Lawrenceburg.

Dr. Dexter L. Woods, Waynesboro, read a paper on "Fractures in General Practice." Discussed by Dr. J. H. Tilley, Lawrenceburg.

Shelby County:

September 6—"Case Reports: Retained Murphy Button," by Dr. J. H. Francis.

"Intestinal Obstruction," by Dr. R. F. Mason.

Papers: "The Use of Metrozol in the Treatment of the Psychoses," by Dr. C. C. Turner.

Discussion: Dr. E. W. Cocke and Dr. D. C. McCool.

"A Study of One Hundred Thirty-Seven Premature Babies," by Dr. David Goltman. Discussed by Dr. W. L. Rucks and Dr. A. G. Quinn.

Washington County:

September 1—"Roentgen Therapy in Infections and Malignant Diseases," by Dr. Walter Hankins. Discussed by Drs. J. L. Hankins and J. G. Moss.

"Report of Interesting Eye, Ear, Nose, and Throat Cases," by Dr. E. A. Lodge. Discussed by Drs. N. E. Hartsook and U. G. Jones.

OTHER MEDICAL SOCIETIES

The Southern Tuberculosis Conference and the Southern Sanatorium Association will have its annual meeting September 19-21 in Louisville, Kentucky. Hotel headquarters will be the Brown Hotel.

The twenty-third International Assembly of the Interstate Postgraduate Medical Assembly of the Interstate Postgraduate Medical Association of North America will be held in the public auditorium of Philadelphia, Pennsylvania, October 31-November 4, 1938. All scientific and clinical sessions will take place in the auditorium. Hotel headquarters will be the Benjamin Franklin Hotel.

Preassembly and postassembly clinics will be held in the Philadelphia hospital on Saturday, October 29, and Saturday, November 5.

For hotel reservation write Mr. Thomas E. Willis, Chamber of Commerce Building, Twelfth and Walnut Streets, Philadelphia, Pennsylvania.

The first American Congress, devoted to a consideration of medical, nursing, and other problems associated with human reproduction, will be held in Cleveland, Ohio, from September 11 to 15, 1939, inclusive. It will be designated as the American Congress on Obstetrics and Gynecology. The promotion and sponsorship of the congress has been delegated to the American Committee on Maternal Welfare, Inc.

The purpose of this congress is to afford opportunities for discussing and publicizing the problems associated with human reproduction and the health of women and newborn babies. The value of more generally disseminated knowledge about the processes and problems of human reproduction and of the special diseases of the female generative organs and the newborn is important in the maintenance of public health and therefore the interest of woman's welfare extends not only to the medical profession, but to associated groups, including nurses, public health officials, hospital administrators, eugenists, and many others.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Building, Nashville

Routine Spinal Anesthesia in a Provincial Hospital; Comparative Study of Postoperative Complications Following Spinal and General Ether Anesthesia. K. K. Nygaard, Acta Chirurgica Scandinavica, November 11, 1936.

Spinal anesthesia was successful in 94.8 per cent of 1,198 cases. Nausea and vomiting occurred in 36.3 per cent, cardiovascular symptoms in 11.5 per cent, respiratory symptoms in 2.9 per cent, and shock in 0.85 per cent of cases, one of which died on the operating table. The incidence of complications mentioned was higher in association with upper abdominal operations than with lower abdominal and extra-abdominal procedures.

As compared with ether in a series of 692 cases it was observed that there was 51.8 per cent of nausea and vomiting compared to spinal anesthesia of 36.3 per cent. Backache occurred in 6.9 per cent in spinal anesthesia to 7.8 per cent with ether, urinary retention in spinal 9.3 per cent to twelve per cent with ether, pulmonary complications in spinal 2.9 per cent to 4.7 per cent with ether, headache following spinal anesthesia occurred 22.4 per cent to thirteen per cent following ether. These nervous sequels were also noted following spinal anesthesia such as neuritis of both lower extremities, combined left-sided paralysis of the abducens nerve and partial paralysis of the right facial nerve and progressive myelitis.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

Lichen Urticatus (Papular Urticaria): Treatment with Parathyroid Extract; Theoretical Consideration of the Etiology. Donald M. Pillsbury and Thomas H. Sternberg, Am. J. Dis. Child., 53: 1209 (May) 1937, Archives of Dermatology and Syphilogy, August, 1938.

The authors point out that the usual course of lichen urticatus is prone to be chronic and there is frequent exacerbations and complete remissions in the fall which last throughout the winter.

The eruption has a striking seasonal incidence, about eighty-five per cent of the cases occurring from April to August, inclusive.

Their therapy is similar to the one originally suggested by Cornbleet and consists of the oral administration of some calcium preparation (calcium lactate, calcium gluconate or dicalcium hydrogen phosphate) and subcutaneous injection of parathyroid extract at weekly or biweekly intervals, according to the severity of the process. The dose of parathyroid extract varied from ten to fifteen units per injection for infants and from twenty to twenty-five units for older children.

Good or excellent results were obtained in eighty-five per cent of thirty-four patients treated with parathyroid extract, topical applications and oral administration of calcium, as compared with thirty-eight per cent in a group of twenty-six patients whose treatment did not include parathyroid extract. In many instances the itching was relieved almost immediately, and the papular lesions underwent involution in a few days.

Note: I have used this method in cases of lichen urticatus, allergic dermatitis, and urticaria in both children and adults with very good results.

OBSTETRICS AND GYNECOLOGY

By Hamilton V. Gayden, M.D.
Suite 234 Doctors Building, Nashville

Management of Placenta Previa—An Analysis of 47,828 Cases. David Findley, American Journal of Obstetrics and Gynecology, 36: 267-275, August, 1938.

Paul Portal (1664) awakened a lively interest in placenta previa nearly three centuries ago when he demonstrated for the first time that in placenta previa the afterbirth is embedded over the cervical os. Mauriceau, Pugh, Deventer, Smellie, Levret, and a host of other obstetricians of the seventeenth, eighteenth, and nineteenth centuries advocated means of control of the hemorrhages and speedy delivery of the baby and afterbirth. This careful study and impartial analysis of a large series of cases taken from the records of clinicians and hospitals the world over throws light on the treatment of placenta previa, the results of various methods and the progress made by the profession.

The total series is divided into two groups: (1) those reported up to and including 1921 and (2) those reported from 1922 to the present time. The latter group shows a small but definite decrease in both maternal and fetal mortalities over the former. The decrease may be accounted for by (1) better knowledge of pathology resulting in early diagnosis, (2) dangers from untimely interference, (3) improved operative technic, (4) advance in the field of anesthesia, (5) recourse to blood transfusions, and (6) adequate maternity facilities.

A subdivision of these two main groups into those patients delivered vaginally and those by the abdominal route is made showing the mortality rates of each. The incidence of Cesarean section has increased from 6.07 per cent during the past fifteen years, while the maternal mortality rate has been more than halved and falls well below the group delivered from below. A slightly lessened maternal death rate was also noted in those patients delivered vaginally. This decrease is chiefly due to the avoidance of such methods as accouchement force, Braxton Hicks version, vaginal packs, and vaginal Cesarean sections. Tables revealing the results of both abdominal and vaginal methods indicate that repeated, prolonged or complicated manipulations greatly enhance the risks to both mother and child.

Low cervical Cesarean section is the procedure of choice in complete placenta previa and in other types presenting a closed cervix. In marginal or lateral previas with a dilated cervix the method of choice is between artificial rupture of the membranes with forceps or spontaneous delivery of the fetus and internal podalic version.

Blood transfusions are invaluable aids in combating acute anemia and shock and in shortening the period of convalescence.

References are made regarding the frequency of placenta previa, the incidence of the various types of previas, parity, the period of gestation and the presentation and lie of the fetus.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Ophthalmoscopy in Red-Free Light. T. A. Vos, American Journal of Ophthalmology, August, 1938.

The author is impressed by the fact that red-free ophthalmoscopy is almost routine in the Vogt clinic and is used by everyone there. The apparatus originally described by Vogt is still the only adequate one. It is advisable to use an arc lamp with large carbons, as at best the area of the fundus illuminated is small. With substitute means, such as the mercury arc, the yellow color of the fovea and its derangements are not clearly seen. The mercury arc is not sufficiently intense and causes fluorescence of the lens. To show the range of usefulness of the method, the author briefly describes the fundi of twenty-one patients.

In toxic amblyopia, one is no longer dependent upon subjective manifestations. The papillomacular bundle is always involved, and this fact allows one to exclude disease of the macula. In optic atrophy, one sees extensive areas in which the nerve fiber striation has disappeared. Temporal pallor is always associated with a corresponding indistinctness of striation of the papillomacular bundle. It is interesting to note that a cystoid degeneration of the macula explains the disproportionate reduction of visual acuity in some uveal inflammations. In closure of the central retinal vein there usually is cystoid degeneration of the macula, and often its development from very small cysts at the edge of the macula can be followed. The diagnosis of absent fovea can be made only with red-free light.

PEDIATRICS

By John M. Lee, M.D.
Doctors Building, Nashville

Pertussis Immunization. L. J. Schermerhorn, M.D., Grand Rapids, Michigan, Proc. American Academy of Pediatrics, The Journal of Pediatrics, August, 1938.

Since 1932 an extensively controlled study of pertussis has been in progress in Grand Rapids and among other phases studied has been the value of Hemophilus pertussis vaccine as a preventive. Children from eight months to five years of age were included, none of whom had previously had pertussis or preventive therapy. About one-half were given vaccine and a similar number received no preventive treatment. The two groups were comparable as to age and time of selection, and the effort was made to leave children of both groups in each family when possible.

A vaccine containing ten billion bacilli per cubic centimeter made in a manner similar to that of Sauer was given as follows: the first dose, one cubic centimeter, given subcutaneously in the left biceps; the second of 1.5 cubic centimeters was given in the right triceps; the third of 1.5 cubic centimeters was given in the left triceps; and the fourth of 1.5 cubic centimeters injected into both the right and left deltoid muscles, injections being given at weekly intervals. Nurses especially trained to obtain histories of each child's health made home visits every two months on the children in both the vaccine and the control group. They were especially alert for histories of exposure and symptoms suggestive of pertussis.

On October 1, 1936, a summary listed 3,102 children under observation, with 1,573 in the vaccine group and 1,529 in the control group. In the vaccine group there were 151 exposures and twenty patients with pertussis. In the control group there were 182 exposures and 140 patients with pertussis. Thirteen per cent of the patients exposed in the vaccine group developed pertussis and seventy-six per cent of those exposed in the control group developed pertussis.

On September 1, 1937, a summary from incomplete data showed that of 1,971 vaccinated children forty developed pertussis, while 270 children in the control group developed the disease. About seventy-five per cent of the forty pertussis patients in the vaccine treated group were light or very light pertussis, while twenty per cent of the 270 pertussis patients in the control group could be so classed. It would appear that vaccine must protect, at least partially, even those children who do not completely escape the disease.

From these studies the author concludes: "Pertussis vaccine, produced according to the standards described in this paper, will actively immunize about eighty-five per cent of young children who have not been exposed to pertussis. Fifteen per cent of vaccine-immunized children that later develop the disease will have a milder attack than children who have not received vaccine."

ROENTGENOLOGY

By Franklin B. Bogart, M.D.
Medical Arts Building, Chattanooga

Roentgen Therapy of Dupuytren's Contracture. S. R. Beatty, Radiology, Vol. 30, No. 5, p. 610, May, 1938.

Dupuytren's contracture is the term applied to a flexion deformity of the hands caused by thickening and shortening of the palmar fascia. Infrequently the condition is found in the feet.

The definite etiology has not been determined. Trauma, infection, plumbism, and heredity are all factors that have been considered. Heredity is accepted as an important factor, and trauma is not accepted as being more than a possible predisposing factor.

The pathology is that of a gradually developing contracture of the palmar fascia with increasing flexion deformity of the fingers and palms, usually starting as a nodule at the base of the ring finger and eventually involving a part or all of the palmar fascia and its extensions. The tendon sheaths are not intrinsically involved. The diagnosis is made from the presence of the thickened nodules in the palm at the base of the fingers, or from the characteristic flexion deformities of the more advanced cases.

The usual treatment is surgical, and in the hands of a competent surgeon, the results may be excellent. The chief objections to surgery are the danger of infection, the possibility of injury to the small but important vessels and nerves, and the prolonged period of immobilization in extension.

Roentgen ray offers a method of treatment with none of the above objections and can be carried out without loss of time or pain to the patient. In case the results are not satisfactory, surgery can still be used.

The technique used is 100 kilovolts, five milliamperes, thirty centimeters dist., one millimeter to two millimeters aluminum filter. A dose of 100 r to 200 r (in air) is given at weekly intervals for three or four weeks. Several such series may be given at intervals of six to eight weeks.

Since 1928 ten cases have been treated. In some of the ten cases there has been improvement with loss of pain, reduction of palmar nodules, and relief of contracture.

The author does not discourage the use of surgery. He advocates further use of the method and study of the cases to determine which cases are best suited to surgical treatment and which should first be subjected to irradiation.

SURGERY—GENERAL AND ABDOMINAL

By Battle Malone, II, M.D.
1400 Monroe Avenue, Memphis

Tuberculous Peritonitis—A Speculation on the Cause of Improvement Following Surgery. Merle J. Brown, M.D., Surgery, 4: 185, August, 1938.

The author briefly reviews the literature and history of this condition. Until the advent of modern surgical methods with frequent laparotomies, the incidence of tuberculous peritonitis was not known. Infection is thought to be introduced by the digestive tract through direct contamination of food or by direct contamination by the fingers, flies, and the animals producing milk. About fifty per cent of cases of abdominal tuberculosis are due to the bovine bacillus.

Eliason classifies the condition under three heads: the exudative or wet type, the adhesive or dry type, and the suppurative type. The symptoms depend mainly on the acuteness or chronicity of the type. The chief complaint is usually abdominal pain, swelling of the abdomen and weakness. The acute form may occur suddenly with chills, temperature 101 to 105 degrees, headache, vertigo, malaise, nausea, vomiting, abdominal pain, distention, tenderness, rapid pulse, anorexia, leukopenia, and rapid ascites as the usual symptoms. A previous history of pleurisy, low-grade fever, loss of weight, with some digestive symptoms, mainly constipation, should make suspicious of the condition.

Treatment should consist of a combination of the general management of tuberculosis and surgery used intelligently. Surgical treatment may be laparotomy alone, laparotomies with eradication of focus, paracentesis with removal of fluid, paracentesis with removal of fluid followed by the injection of air or oxygen. Tuberculous peritonitis should never be drained because of the danger of the formation of a fecal fistula. Savage, in 1928, wrote advocating treatment of tuberculous peritonitis by administration of ether anesthesia. Since the improvement following laparotomy is out of proportion to the surgical work done, he attributed the good results to the anesthetic.

The authors report several cases taken from the files of the Robert Packer Hospital. Some of these were treated by laparotomy and others by the administration of ether anesthesia without laparotomy. Results were generally good. In support of the anesthetic therapy, they reason that the decreased oxygen intake has an inhibiting effect on the tubercle bacilli. Also, since in the tubercle bacillus itself, fatty acids, lipoids, acetone-soluble fat, and wax can be isolated, it is thought that possibly a chemical action takes place between the ether vapor and one or more of these substances which is injurious to the organisms.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.
By G. A. Williamson, Jr., M.D.
Medical Building, Knoxville

Nephrostomy—Some Clinical and Experimental Observations. Harry C. Rolnick, M.D., S. G. and O., August, 1938.

The most satisfactory drainage of a kidney is through a tube inserted through the lower pole into the pelvis. This drainage is superior to either pyelostomy or ureterostomy. Common indications for nephrostomy are following operations for stone, plastic operations on the pelvis, chronic pyelonephritis which does not respond to other types of treatment, in patients too sick to permit nephrectomy, chronic unilateral or bilateral hydronephrosis, in accidental ligation of a ureter.

He describes a simple technique for nephrostomy that can be done under local anesthesia, and does not require complete mobilization or delivery of the kidney. The lower pole is exposed, a clamp pushed through into the pelvis carrying a size eighteen or twenty mushroom catheter which is left in place. The exit of the tube should be through the lumbar trigonum, as this gives anatomically correct drainage, and allows the patient to lie comfortably on his back. If the kidney contains stones, or multiple noncommunicating pockets, the entire kidney should be exposed.

Eight of thirteen patients on whom a preliminary nephrostomy was done went through nephrostomy successfully and uneventfully. Four did not survive nephrostomy. In four cases large stones were removed through this small incision. Kidneys may be saved by this procedure alone, which at first were thought would require nephrectomy.

Experiments on dogs showed little damage to have followed nephrostomy.

He concludes that deep mattress sutures should never be used to control bleeding.

BOOK REVIEW

Outline of Roentgen Diagnosis. An Orientation in the Basic Principles of Diagnosis by the Roentgen Method. Leo G. Rigler, Prof. Radiology, Univ. of Minn. Price, $6.50. Publishers: J. B. Lippincott Co., Philadelphia.

This book is written for the student and the physician, who is not a radiologist. No attempt is made to present an exhaustive description of the various conditions. On the contrary as stated in the title, only a concise outline of the outstanding characteristics of the various lesions is given. This is a distinct advantage to the busy practitioner and to the student. All the usual lesions and many of the unusual lesions are covered. The grouping of the illustrations at the back of the book in atlas form is to be commended. Throughout the text, the references to the illustrations are numerous, and very little time is lost in referring to them. The drawings, which are used, are of good quality and, in many cases, illustrate the characteristic

(Continued on page 380)

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features of the lesion better than could be done by a reproduction of the original X-ray film. The book is published with and without the atlas section. The reviewer recommends that the atlas edition be purchased by all who contemplate acquiring the book. The text, alone, would be of value to the student, who is attending a course of lectures, but, to the practitioner, the atlas will be indispensable. The index is accurately compiled and is sufficiently complete to enable one to quickly locate the subject desired.

With the present tendency for so many physicians to have their own X-ray equipment and to interpret their own films, a book of this type is indispensable, and this book will form a valuable addition to every physician's library. —F. B. B.

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ISSUED MONTHLY, Under Direction of the Trustees
Copyright, 1937, by the Tennessee State Medical Association
H. H. SHOULDERS, M.D., Secretary and Editor W. M. HARDY, M.D., Asst. Secretary-Editor
OFFICE OF PUBLICATION, 508 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXXI October, 1938 No. 10

STERILIZATION OF THE FEMALE BY CAUTERIZATION OF THE UTERINE CORNU

Charles Gardner Bowers, M.D., Margaretta Keller Bowers, M.D., Clinical Professor of Gynecology, Meharry Medical College*

THE OCCLUSION of the fallopian tubes by burying the fimbriæ, by crushing and ligation, or by complete excision is one of the common operations of gynecologic surgery to produce sterility. Each of these is a procedure which necessitates a major operation, requires several days of hospitalization, and incapacitates the patient for a number of weeks thereafter. For many patients as well as physicians, the conditions involved cannot be fulfilled, and the treatment must be neglected. This is especially true of those sections of the country remote from hospital facilities. The method herein presented is adapted to communities where hospital accommodations are lacking, or where it is impractical for some reason for the patient to undergo the necessary hospitalization. Further, it is readily employed as an office procedure of only slightly more disturbance than ordinary cervical cauterization. The general practitioner skilled in minor surgery, who is familiar with usual gynecologic practice including cauterization of erosions, may easily acquire the necessary technique with only minor additions to his instrumental armamentarium. It seems strange that a simple method of tubal occlusion which has been known for many years should not receive more widespread acceptance.

History

In 1850 Froriep suggested sealing the uterine end of the tubes with silver nitrate but the idea was soon abandoned and he left no recorded cases. Later in the nineteenth century Kocks devised a galvanocautery to produce tubal occlusion. In 1912 Robert L. Dickinson began to produce strictures of the tubal openings into the uterus by actual cauterization, first using a nasal tip cautery and later designing his own instrument. He was handicapped at first by lack of certain means of determining the closure of the cornu. To overcome this uncertainty he developed the method of hysterosalpingography with radiopaque media, and, associated with W. H. Cary and Dudley Roberts, made the first uterosalpingograms. He used also the air insufflation test for which he designed a very simple and practical apparatus. He reports forty-one cases of attempted cautery stricture with about ten per cent failures in the follow-up, but no pregnancies. Several of these cases were followed as long as six years, and at the end of that time the cornua were as effectively sealed as at the beginning. It must be borne in mind that this work was done twenty-five years ago. Nishizaki, in 1929, reported on the method of electrocoagulation and the contour of the uterine cavity,

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*We wish to acknowledge with gratitude the assistance given us by Dr. R. L. Dickinson and Dr. C. J. Gamble, without whose help this work could not have been done.

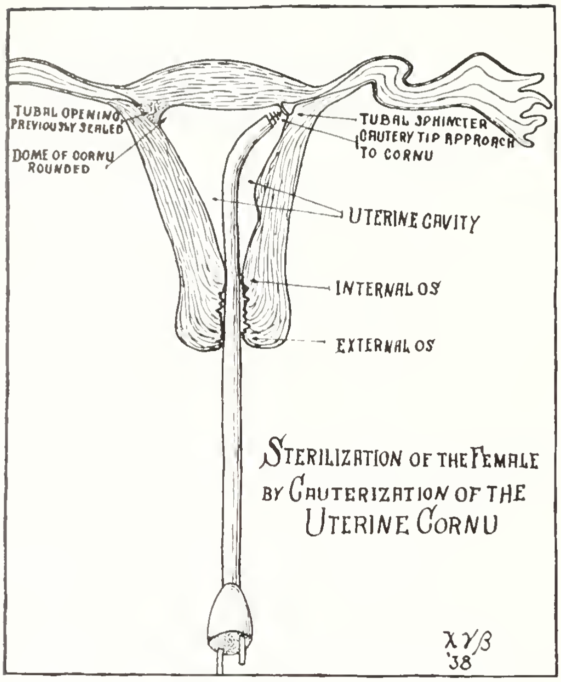
TUBAL OPENING PREVIOUSLY SEALED
DOME OF CORNU ROUNDED
TUBAL SPHINCTER
CAUTERY TIP APPROACH TO CORNU
UTERINE CAVITY
INTERNAL OS
EXTERNAL OS
STERILIZATION OF THE FEMALE BY CAUTERIZATION OF THE UTERINE CORNU
XYB '38

Fig. 1.

as shown by casts. DeVilbiss reported, in 1934, a series of thirty cases of cauterization of the tubal orifices. One year later seventeen of these were found to be blocked, nine were open, and seven were reported pregnant, three of whom had originally been reported occluded. In her conclusion she feels that there is no assurance that the tubes will remain closed. However, the duration of the time of cauterization used in this series, of from ten to fifteen seconds, we feel is insufficient for deep coagulation of the uterine musculature. It seems probable that had they been deeply cauterized, recanalization would not have taken place through the dense scar tissue of the burn. Her cases were checked by air insufflation. Mortimer Hyams, in this same year, reported a method of cauterization of the uterine cornu with an instrument of his own devising, using the high frequency fulgurating current, and visualizing the entire process with the fluoroscope. He reports no failures in this method among his completed cases, and is continuing observation of these cases to determine the permanent outcome of the treatment. It is to the method of Dickinson which we wish to redirect attention.

TECHNIQUE

The well-equipped office has, with one or two additions, all of the necessary instruments for the complete treatment. An X-ray machine is a valuable but not vital piece of equipment for this procedure. It is useful in demonstrating any irregularities or anomalies of the uterine cavity and tubes before treatment. However, these facts are usually demonstrable by bimanual examination, the uterine sound, and tubal insufflation. For purposes of demonstration and record we have complete X-ray series of all of our cases. The only necessary piece of extra apparatus is the specially designed cautery electrode, and this could in fact be dispensed with, using as was done in our earlier cases a long-shanked, coiled, cervical cautery bent to the contour of the uterine cavity.

After determining the necessity for sterilization, the patient is requested to be at the office a week or ten days after her regular menstrual period. She is instructed to take a copious douche of warm soda water an hour or so before her appointment. A careful general and gynecologic examination is then made, noting the size, shape, and position of the uterus and its addenda, having care for any contraindications.

Following the pelvic palpation she is left in lithotomy position and a Sims speculum introduced. The vagina is then thoroughly swabbed with a suitable antiseptic, moving the speculum so as to permit cleaning the entire vaginal wall, and using greater care about the anterior and posterior fornix and cervix. The plug of mucus occluding the os is then removed and the cervical canal cleaned with cotton saturated with the antiseptic. A lip of the cervix is grasped with a tenaculum and the catheter, to which is attached a syringe with ten cubic centimeters of radiopaque oil, inserted until its tip passes the internal os and the rubber olive fits snugly into the canal. Where the cervix has been so badly lacerated as to prevent an oil-tight contact, the margins may be approximated with other tenacula. The oil is slowly injected, care being taken not to use too much pressure. Six to eight centimeters of oil will flow readily, and then the patient will complain of slight cramping and an increased resistance to pressure will be noted. The injection is discontinued, but the catheter is retained in position to prevent outflow of oil. An X-ray is taken and immediately developed, outlining the cavity of the tubes and uterus.

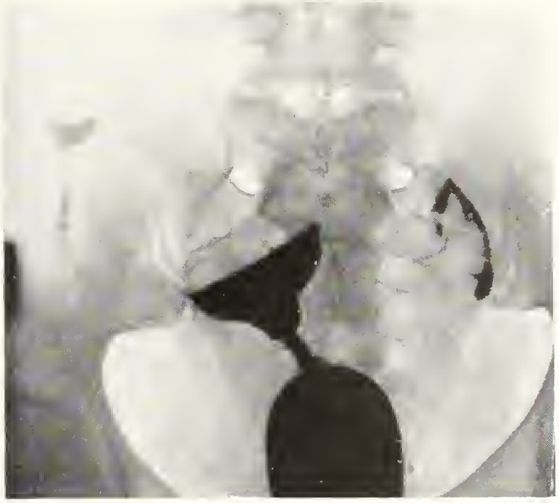

Fig. 2. Mrs. P. B., white, age 33, para v, all living. Oct. 16, 1937, both tubes open. Cauterized seventy-five seconds each cornu.

The uterine cavity is then gently explored with the sound, meanwhile forming a mental picture of the inner walls, watching for irregularities or depressions which might be confused with the cornu, and finally noting the depth, angle, shape, and position of the uterine horns. This last is especially important as the cautery must be placed in these locations with as little trauma as possible. The tubal openings may be visualized, in the normally placed uterus, in three dimensions, as latero-superio-posterior, as was so beautifully demonstrated by Nishizaki. However, in a misplaced uterus they naturally assume other positions according to its deviation.

At this step in the operation Dickinson measures the depth of the uterine cavity with the calibrated sound and adjusts a sliding shoulder on the cautery to permit its entering only to this depth, thus reducing the chances of perforation. It has been our experience that if ordinary gentleness is observed there is little possibility of this accident occurring. Granting the remote chance that it did happen, the fact would be immediately recognized by lack of resistance to the instrument, and the treatment should be postponed.

For the electrode employed in this series of cases we are indebted to Dr. Dickinson, and is the one illustrated in Curtis, Obstetrics and Gynecology. It is about nine inches long, one-fifth inch in diameter, the distal end is semiflexible and is tipped with a small conical coil of platinum wire. Proximally there are two leads for electrical connections.

The cauterizing coil at the tip is of platinum wire, which was found to average 0.71 millimeters in diameter. It was wound in a conical coil consisting of two turns, the proximal being three millimeters in diameter, and the distal 2.3 millimeters. The height of the helix was five millimeters. The resistance of the wire was found to be 0.015 ohms ± 0.0005.

To bring the cautery to a "cherry red" color in air, the criterion which was used in adjusting the current at the time of each operation, it was found that 8.0 ± 0.1 amperes were required corresponding to a consumption of 0.96 watts. Since the "cherry red" as estimated by different observers varies from 600° to 800° C. with a corresponding variation in the energy radiated of some twenty-five per cent, it must be recognized that this definition of the heat delivered to the uterine tissue cannot be extremely accurate. Experience showed, however, that for practical purposes the definition was adequate.

The cautery electrode is then introduced, following the route previously outlined by the sound. Its active tip is snugly fitted into the uterine horn, and by touch upon its shank it is determined to be in contact with the mucosa on all sides. The current is then turned on for about forty-five seconds, meanwhile the active tip is given a slow rotary motion of a single revolution. This movement of the cautery tip serves a double purpose. It prevents too deep a burn in one spot in the cornu, for which there is no need, as the mucosa is very thin in this location. In the second place it causes the cauterization to be distributed about the entire funnel surface of the cornu, causing destruction of all the mucosa in this area and assuring against fistula formation. This regular distribution of the burn predisposes an even cicatrical stricture. It is important that the zone of coagulation extend into the muscular wall of the uterus as it is here that the contracture is produced. In some cases, intra-uterine manipulation will produce a relaxation of the smooth muscle of the uterine wall. This is commonly seen during an ordinary dilatation and curettage, and makes it difficult to locate the cornu but may be promptly overcome by intramuscular injection of one cubic centimeter of pituitrin.

The opposite side is similarly cauterized and a gauze sponge is left in the vagina to absorb the oily and sanguinous exudate, which the patient is instructed to remove when she returns home.

There are several methods of determining the correct temperature at which the cautery tip should be heated. One is to test it against the cervix to see how deep a burn is produced before treating the cornu. This has the added advantage of indicating in a general way how long a time is needed for the healing of the tubal treatment. The method we employ is to adjust the current until the tip is a bright red color, which is about 900 degrees in ordinary room conditions. When the tip is applied to the cornu, it is of course cold. As the current is turned on the temperature in the coil rises, but it does not become sufficiently hot to char the tissues, as may be verified on withdrawal of the electrode. It simply coagulates them. The circulating blood has a marked tendency to dissipate the heat and prevent its extending deeply into the tissues. A further test of the depth of the coagulation may be made with a piece of raw beefsteak. It will be seen that after one minute of contact with the adjustments made for bright red heat the depth of coagulation in the steak is only one and one-half millimeters distance from the coils of the electrode.

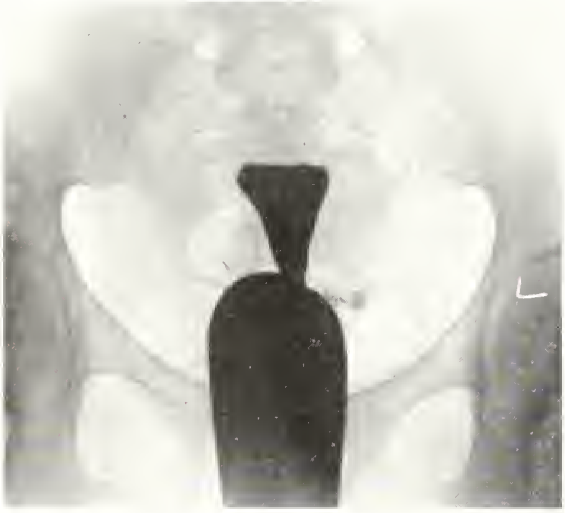

Fig. 3. Jan. 14, 1938, both tubes closed.

Within a few days following the treatment there will be a serosanguinous discharge for a week or so which may necessitate a daily cleansing douche. This is similar to the discharge following deep cervical cauterization, but it is seldom so severe as to be incapacitating.

After she has had a normal period, and at least six weeks after she has been cauterized, the patient is checked for the patency of the tubes. This may be done either by air insufflation to 150-200 millimeter pressure or by revisualization with X-ray. If the tube is closed, the cornu will be seen to be dome shaped and no oil will enter the tube. If open, the oil will enter the tube and the cornu will have its original contour. It is well to make a preliminary X-ray before the second visualization, as the residual oil sometimes leaves confusing shadows.

It is not usually necessary to employ any form of anesthesia or sedation in the average patient. However, in some highly nervous women a preliminary sedative of one of the stronger barbitals may be given, and five minutes before the procedure one-eighth to one-quarter grain of morphine may be administered intravenously. Dickinson employed five to ten minims of ten per cent procaine with adrenalin in the uterine cavity, retained for ten minutes. Most patients complain of cramping about as severe as that of deep cervical cauterization, and a few state that they have no discomfort at all even when no anesthetic is given. It is well to let them recline for half an hour before returning to their duties.

Contraindications include any active infection of the genitourinary system, or any chronic infection of the tubes or uterus which at one time was severe. Cases of malignancy, fibroids, polyps, and endometritis should not be treated. The menstrual period, as well as the few days preceding and following it, is also a contraindication.

Complications

In this series of twelve completed cases there have been forty-two intra-uterine procedures, including the oil injections. There has been only one condition which may be considered a complication, namely, uterine bleeding. When it does occur, it usually has the clinical appearance of a normal period, and in only one case was it sufficiently severe to necessitate bed rest for a few days. This case was probably cauterized too early post partum. It seems desirable to wait at least four months following the birth of the last baby to be sure that involution is complete. Pain following the treatment has been conspicuously absent. There is an occasional temporary dysmenorrhea. We have had no evidence of perforation or of pelvic cellulitis following the treatments. As one becomes more familiar with the procedure these complications become more improbable.

Results

In this series of twelve cases six were cauterized one time, five were cauterized twice, and one was cauterized three times before we were assured of complete closure. We find that the later cases do not as frequently require a second treatment, due no doubt to increased familiarity with the procedure. No cases have been encountered where closure of the tubes could not be produced. No pregnancies have occurred during or following the treatment, and no contraceptives have been advised.

A Typical Case Report

Mrs. S. K., Case No. 16, age thirty-five, para ten, six living children, the sixth and ninth child having died because of severe spina bifida. One spontaneous miscarriage at four months. On January fifth, seven months post partum, she was cauterized for sixty seconds on each side ten minutes after administration of one cubic centimeter pituitrin. She complained of moderate pain during cauterization, and slight pelvic tenderness for three days following. A serosanguinous discharge persisted for three weeks but caused no inconvenience. February nineteenth a preliminary X-ray showed some residual oil in the pelvis. Injection of the uterus with four cubic centimeters of oil, which filled it to capacity as indicated by the return of some of the oil into the syringe after the pressure was released, showed both tubes closed and the uterine horns dome shaped, indicating complete obliteration of the tubal openings.

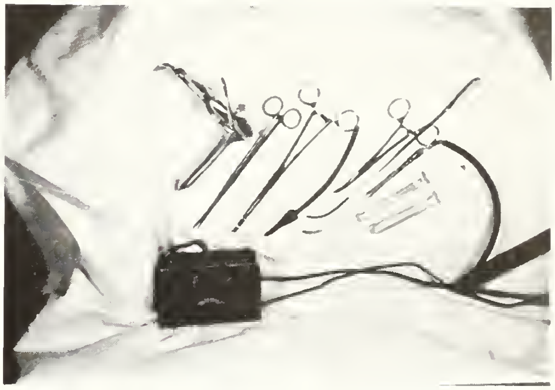

Fig. 4. The instruments used in this method of sterilization.

Conclusions

A method of sterilization of the female is here presented in which it is unnecessary to enter the abdominal cavity. It is serviceable to physician and patient to whom hospital facilities are not available. It does not require long periods of invalidism and appears to have a very low index of morbidity. It is a procedure comparable to that of vasectomy in the male. There is no doubt that complete obstruction of the fallopian tubes can be accomplished by this method, however, it is our purpose to continue this study to further simplify the procedure, and to determine whether there is ever a recanalization through the scar.

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DISCUSSION

DR. K. C. COPENHAVER (Knoxville): Mr. President and Gentlemen of the Society: I wish that we could have had more here to hear this paper. Dr. Bowers very kindly sent me a copy of it and referred me to the literature and where he got his idea. Personally I have never used this and have never known of anybody using it. It seems to me that in isolated cases it might be a very good thing, but so far as I know we always have to have some very good reason for doing anything of this sort. Personally I would hesitate to sterilize a woman who did not have at least two living children, and when they have two living children the chances are ten to one they have some condition present that needs to be corrected surgically. These conditions are a lacerated perineum, lacerated cervix, retroversion, prolapse, and multiple pregnancies in poor families. Of course there are two types of cases that get good treatment. One of them is the rich and the other is the poor, and for those poor cases it seems to me that the safe and sane thing to do would be surgically to sterilize them because there has been considerable grief even to cauterizing cervices in the office. While he describes this thing as being probably equal to cauterization of the cervix, it seems to me it would be a great deal more painful and attended with a great deal more danger, because we have always noticed the terrible odor and the awful slough that we get from just a simple cauterization. If that slough which is bound to come from a burn were left in the uterine cavity, it seems to me we would probably get sapremia, or maybe some type of infection.

The other objection I have to this method—and this is not in the way of criticism, Dr. Bowers, but it is just to bring up questions—is that it is a blind method. We all know how freely movable uteri are, especially in women who have borne children. You can put them on the X-ray table and get the sound up in the cornu and measure that, and by the time they get off on to the operating room table, or somewhere else (I understand your procedure is to move them to another table), that uterus may be in an entirely different position, and we might not be able to cauterize the spot which is very vital for sterilization.

All of you who have done sterilization operations, I am sure, like myself, have had some failures, even though when you are inside the abdomen you cut the tubes and tie them. I would like to report one case. I had a case that had about six children, and this woman had a retroversion and laceration of the perineum and I agreed to operate on her. I repaired the perineum and did a cauterization of the cervix and suspension of the uterus and disconnected the tubes by cutting them and tying them, and, of course, naturally in the procedure of getting rid of the raw surfaces probably those tubes became very close to each other. The woman's husband finally bankrupted his bill, and about a year and a half afterwards he called up and said, "I thought you told me you sterilized my wife."

I said, "That is just something sent on you for the way you paid your bill. I did." I did not hear anything more from him. He said his wife was about six months pregnant and going to another doctor.

I think this might have a field, but I doubt very much whether this procedure will ever come in common use or practice. It is a nice procedure, and I think Dr. Bowers deserves a lot of commendation for bringing this before the society, but I would like to hear, next year at Jackson, a further recheck on these things, because of the possibility of these tubes, even after they are cauterized and look perfectly sealed, becoming open again.

I certainly will follow this with a great deal of interest, and I appreciate your bringing the paper to us.

DR. W. C. DIXON (Nashville): Mr. President and Ladies and Gentlemen: Dr. Copenhaver has pointed out the fact that it is very difficult to sterilize a woman even with rather extensive surgery. Nature has made wonderful provision for propagation of the species, and recanalization of occluded tubes has occurred in a considerable number of instances. There is even a case report on record where both ovaries and the uterus were removed and the woman conceived. Of course that is hard to swallow, and I was not present at the operation, and I do not know just what was done.

About fifty per cent of the cases that require sterilization are women who at the time are pregnant. That is, a woman becomes pregnant, she has some serious contraction of the pelvis, or tuberculosis, or diabetes, or something that requires interruption of the pregnancy, and the sterilization procedure of course can be combined with the interruption of the pregnancy.

It has always seemed a little strange to me that it is always the women who must be sterilized. The male assumes to himself a certain superiority, and you rarely hear of a ligation or severance of a vas. It is a very simple office procedure, as simple as Dr. Bowers' very ingenious operation. That also applies to sterility. Wherever there is a sterile mating the woman is always at fault, which of course is not at all true; the male just assumes that attitude and goes on that assumption.

I certainly congratulate Dr. Bowers, however, on this work. If his procedure will produce sterilization and if the sterilization is permanent, he has certainly made a contribution to the question of sterilization which will be of great value. The only danger that I can see, if it is successful, is that it might become too popular and we might have a further reduction in the birth rate that we are now beginning to suffer from. Of course I know Dr. Bowers and his charming wife do not sterilize people unless there is some very definite indication for it, but there might be people who, if this is so easy and successful as an office procedure, might abuse it.

I certainly hope that they continue this interesting work and that they gather up a considerable number of cases and follow them over a considerable number of years. I would not feel safe on this procedure producing sterilization under a year at least, because I think nature's strenuous efforts to keep up communication between the ovary and the outside world is such that recanalization might occur even after the end of a number of months. Of course there are procedures that do not require as extensive an operation as removal of the fundus that have been highly satisfactory. The Madlener operation, for instance, can be done by a vaginal section. It consists in crushing the tube with a heavy clamp, ligating it with silk, and it has given a high degree of sterility in a considerable series of cases. That is certainly simpler than abdominal section, and it is successful in a very high degree of cases.

I am awfully sorry that this very excellent presentation did not have a larger audience, and I sincerely thank the Drs. Bowers for this work, and I hope that they continue it and will at a later date give us their end results.

DR. MARGARETTA BOWERS (closing): Mr. Chairman and Gentlemen: You are very kind to give me a woman's privilege of having the last word. We have had to work without hospital facilities, among a very poor population, and the need for sterilization has been very constant among us. Most of our patients have had from six to ten pregnancies, most of them with a large number of living children.

We do not move the patient during the procedure. There was some misunderstanding about that. After the pelvic examination of the patient and the examination with the sound, she is in exactly the same position when the cauterization is done.

We thank you for this very lovely discussion. You have been very kind. We want to stress again that this is a preliminary report and that further study is needed for complete evaluation of our work. However, absolute closure of the tubal orifices may be accomplished without entering the abdominal cavity.

Thank you.

COMPARATIVE ASPECTS IN THE TREATMENT OF SYPHILIS*

EMMETT R. HALL, M.D., Memphis

THE COMPARATIVE ASPECTS in the treatment of syphilis through its many phases of prevention, control, and treatment offer a fertile field for argument. The subject is too extensive to cover completely in so short a paper, therefore, I will describe briefly the selection of drugs and the method of treatment from a comparative standpoint. In the recent campaign against syphilis, there has been a tendency, on a part of the public health officials, to lay the blame in lack of control at the door of the medical profession. They point with just pride to their success in the control of typhoid fever and smallpox. Syphilis however presents an entirely different problem. In smallpox there is a specific vaccine; in typhoid inoculations are effective; and in addition the source of spread can be controlled. In syphilis we lack these effective measures. Human desires and passions know no restraining influence. Promiscuous sexual intercourse, the source of most syphilitic infections, cannot be prevented by serums and vaccines. Religion has failed to elevate our moral conduct. Lack of education is the greatest hindrance to prevention in our own immediate vicinity. An ideal program is yet to be presented.

It is generally conceded that old arsphenamine or 606 has been the most valuable preparation in combating syphilis. It is one of our oldest products and has stood the test of time. It promotes more rapid healing, produces early sterilization of infectious lesions and is excelled by none in reversing the blood serology. We have also noted fewer reoccurrences under its administration. It has, however, many disadvantages. It is not practical for use in private practice, where only a few patients are treated weekly, on account of the fact that it requires an elaborate setup and alkalinization. It is too time-consuming for the private practitioner, where at least fifty per cent of the syphilitics are treated. Osborne, Rickloff, and Butler[1] prefer arsphenamine from the standpoint of therapeutic results and also note fewer undesirable reactions. It is their experience that reactions are no more common following arsphenamine than other similar preparations.

Neoarsphenamine is probably the most widely used product at the present time. Its ease and convenience in administration makes it desirable for office use. It is unfortunate that this is true, for it leads to the use of a slightly inferior product. Therapeutically, neoarsphenamine approaches arsphenamine when given in the proper dosage, but it must be remembered that the dosage is, or should be, larger. Resulting reactions following neoarsphenamine are also similar to those of arsphenamine. The nitritoid reaction is reported to be more common by Moore et al.[2] Many of the undesirable reactions are, no doubt, due to too rapid injection and could be avoided. Neoarsphenamine is perhaps the best product to use in the treatment of infants, the aged, and debilitated patients.

Mapharsen, a relatively new product, a trivalent arsenical, prepared by Parke, Davis and Company, has recently been introduced to the medical profession. It is thought to be the active end product of other arsenicals. Its toxicity is high, thus requiring the administration of a small dose, varying from .03 grams to .06 grams. With the use of mapharsen, early sterilization of cutaneous lesions and rapid reversal of the Wassermann have been reported by several observers. Reactions of all types occur less frequently than with neoarsphenamine and arsphenamine. We have been able to substitute it in patients showing an intolerance to other preparations and have seen only a few mild reactions following its use in a limited number of injections.

The preparation is promising and may replace neoarsphenamine, but its evaluation cannot be made at this date. In a recent conversation, Moore made the statement that he thought it equivalent or superior to neoarsphenamine in therapeutic results, and that undesirable reactions occur less frequently than with either arsphenamine or neoarsphenamine. Personally, I do not feel that the drug should be exploited at this time, at least, not until a true evaluation has been determined in mass treatment over a period of several years.

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*Read before the Tennessee State Medical Association, Nashville, April 12, 13, 14, 1938.

Tryparsamide is our best therapeutic approach in neurosyphilis. Its administration should begin immediately upon diagnosis. It is best used in conjunction, either before or after malaria therapy. We are fortunate in that few reactions result from its use. Exfoliating dermatitis is unknown, and only a few mild cases of dermatitis have been reported. Our greatest danger lies in the production of optic atrophy or resulting jaundice. The former has probably been overemphasized, but nevertheless at times the drug will produce alarming changes. Consultation with an ophthalmologist before and during treatment is advisable. Jaundice is a rather frequent offender. Its development is, however, not a contraindication for further treatment after the icteric index has returned to normal.

Tryparsamide has no place in the treatment of syphilis other than that of the neurological system. In my opinion, twenty to twenty-five weekly injections seem to be sufficient in a course. Bismuth or arsphenamine may be used to advantage during the intervals. Other forms of hyperpyrexia may be used in cases where malaria is not accessible.

It has been my experience that sulpharsphenamine holds no place in the treatment of syphilis, other than in a few isolated cases of syphilis, where one cannot resort to intravenous medication. It produces a higher percentage of jaundice and dermatitis than all other arsenical preparations and possesses the lowest therapeutic index. Osborne[1] stated that this drug was used five times as frequently as arsphenamine by New York state physicians. This I can neither understand nor explain. I am of the opinion that no intelligent explanation can be offered.

Stovarsol, an arsenical preparation, much used in pediatric practice and having a high therapeutic index, but a relatively higher toxicity, is not recommended for general use.

Many reactions following the use of antisyphilitic remedies are the results of indiscretions on the part of the patient and a lack of precaution on the part of the physician. However, mild to severe unavoidable reactions will occur in any clinic or office where a large number of patients are treated. The proper advice to patients as to diet, elimination, etc., prior to and after injections are thoroughly understood, and need no discussion here. For a consideration in discussing the reactions, we may divide them into three groups as suggested by Moore,[2] namely immediate, delayed, and late.

Pain at the sight of injection will occur following the extravasation of any of the arsenicals. The resulting pain, swelling, and sometimes necrosis depend upon the amount of the drug injected into the tissues and can be avoided by due caution. Pain along the course of the vein extending into the shoulder may occur following the injection of overalkalinized arsphenamine and with mapharsen unless given rather rapidly.

Nitritoid reactions, characterized by nausea, vomiting, cramping, rapid pulse, pallor, and collapse may follow the intravenous injection of any arsphenamine. This is most often seen following the use of arsphenamine and neoarsphenamine, occurs occasionally with sulpharsphenamine and silver arsphenamine and is practically unknown after tryparsamide. Mapharsen, in my experience, has produced no severe nitritoid reactions, however, I have seen what I consider one mild nitritoid reaction following its use. In this case, the onset was about fifteen minutes after the injection, characterized by nausea, vomiting, severe abdominal cramping, generalized aching, flushing of the skin, and rapid pulse. Recovery was rapid and complete in twenty-four hours. An ampule of adrenalin should be convenient for immediate administration in these cases.

Other immediate reactions may occur as sudden collapse, cardiac failure, and death in patients with cardiovascular lues.

A chill with fever, diarrhea, and vomiting may occur after arsphenamine administration where it is given by the tubing method. This is due to impurities in the rubber which can be removed by rinsing in sodium hydroxide solution.

In delayed reactions it is not uncommon for a patient to complain of headache, slight nausea, with or without vomiting, generalized aching, and diarrhea following injections. The duration may be from a few hours to several days and may vary in severity from a sense of discomfort to one of alarm. This is perhaps the most common of reactions following the use of arsenicals. If mild and short in duration, they may be forgotten, but if severe and prolonged, a change in preparation may be necessary. Since any reaction may be the signpost of intolerance, always question the patient at each visit relative to nausea, vomiting, diarrhea, itching, or urticaria following the last medication.

Jaundice, one of the late reactions, has recently received considerable attention. Its occurrence may be met following the use of any antisyphilitic remedy. Osborne found it to occur most frequently after sulpharsphenamine, Cannon and Karelitz, also Cole et al., reported it to be more common after neoarsphenamine. The jaundice may develop a few days to several weeks after the beginning of treatment. It is often accompanied by gastric upsets assimilating those of acute catarrhal jaundice. We have observed the development of several cases during the fourth and sixth week of bismuth injections, following the primary course of arsphenamine. The phenomena of postarsphenamine jaundice is not thoroughly understood, but for the present it suffices to say that the drug through its accumulative action on the liver cells destroys them in much the same way as occurs in acute catarrhal jaundice. Progressions from mild cases may be to that of fatal acute yellow atrophy. Tryparsamide may be the offender in some cases. To date, we have noted no cases following the use of mapharsen.

The production of postarsphenamine dermatitis is probably the most feared and least understood of the reactions following luetic treatment. It might be classed with hemorrhagic encephalitis as one of the unavoidable reactions of a properly conducted arsphenamine therapy. It is somewhat less common than in years past, due largely to a better knowledge of the prodromal signs of impending dermatitis, to the development of a purer chemical, and to a marked decrease in the use of sulpharsphenamine.

Sulpharsphenamine, arsphenamine, and neoarsphenamine are the most common offenders in the order named. Tryparsamide may be used with impunity; it may even be given following an exfoliating dermatitis. To date, we have noted no cases following the use of mapharsen.

Herxheimer reaction, sometimes spoken of as a therapeutic shock due, it is believed, to the destroying of the spirochaeta and liberation of endotoxins, may occur during any stage of syphilis and may be produced by either mercury, bismuth or arsphenamine. The reaction following either mercury or bismuth is usually mild and from the arsphenamine is most important in late syphilis, where there might be a lesion in some vital portion of the body. These severe reactions from arsphenamine may be avoided by the use of bismuth or mercury before beginning the use of arsenicals, and where there is a possible danger of a severe Herxheimer reaction, we would advise an initial course of bismuth therapy.

Bismuth was first introduced in the treatment of syphilis in 1921 and has assumed second place, excelled only by the arsphenamines. The ideal bismuth preparation, as in the arsphenamines, is the one which has the highest therapeutic effect and the lowest toxicity. Cole et al. say that "the ideal bismuth compound should probably be one giving rapid absorption from the site of injection and yet not so rapid but there will be an appreciable after-period of absorption from the site of injection, lasting for days or a week or more. The preparation should be of exact dosage. It should not be painful or lead to late abscess formation. The ideal bismuth preparation must show from its excretion curve of metallic bismuth in the urine and feces that the drug is not only being absorbed, but that while some is stored in the system a certain appreciable level of bismuth is circulating continuously in the bloodstream and is being excreted."

Of the water soluble preparations, potassium or sodium bismuth tartrate are probably the most widely used. These, however, are very readily and rapidly absorbed, thus requiring biweekly administration. They may be used where rapid saturation is desired, or in early syphilis where alternate injections of bismuth and arsphenamine are given. Bimarsen, a preparation of bismuth and an arsenical compound, similar to the arsphenamines, is highly recommended by Stokes and O'Leary. It supposedly has the advantage of a combination of these drugs but should not be used exclusive of others. It may be of value in infants and in the treatment of syphilis occurring after forty-five years of age.

Of the oily suspensions, bismuth salicylate is probably the most widely used. Absorption is slow, thus weekly administration is sufficient. Injections are relatively painless and untoward results are mild and infrequent when the proper technique is employed in its use. Thus if we accept Cole's reasoning of the ideal preparation, bismuth salicylate in oil seems to be the most desirable.

In early syphilis bismuth is preferably administered with alternating courses of one of the arsenicals. It is preferable in cases where arrest rather than a cure is desired, in patients intolerable to a dual mode of treatment, and as the initial course in late syphilis to avoid therapeutic shock where the heart or other vital organs are affected.

Undesirable reactions occurring during the use of bismuth are insignificant when compared to those observed in other forms of treatment. Infiltration at the site of injection is relatively common especially when too large a dose is given. Abscess formation may occur in some cases. Such conditions are more prone to occur following the use of the water soluble preparations.

Stomatitis, nephritis, and hepatitis, the latter with jaundice, are seldom encountered. Neither is of serious consequences when the drug is removed at the first sign of intolerance. We have seen several patients develop anemia and lose considerable weight where administration is prolonged as in late lues.

It is sufficient to say here that mercury is a well-known antisyphilitic remedy, rapidly being replaced by bismuth compounds. The latter is proving superior in clinical results, and is more desirable in that fewer reactions are encountered with its use. Mercury, however, still holds a place in the therapy of congenital lues and combined with iodides in the well-known mixed treatment.

In my opinion, a comparison between the triad in the treatment of syphilis is unnecessary; they all have their places in combating the disease. All agree that the arsenicals act more rapidly in sterilizing the blood, in healing cutaneous lesions, and in reversing the Wassermann. Thus, these preparations are preferred in early cases. Bismuth and mercury are used best where serious accidents may occur, in alternating courses with arsphenamines, and in prolonged treatment as required in late and congenital lues.

The question of intermittent treatment or continuous treatment has been pretty well settled in favor of the latter. Almost without an exception all of the large clinics favor the continuous treatment. Clinical relapses are less common, Wassermann reversal is highest, and neurological involvement is less frequent. The practice of giving one or two months' rest after a so-called course of treatment is jeopardizing the patient's chance of a cure.

In conclusion, let me insist that when the diagnosis is once established treatment be continued to the end. I am convinced that insufficient treatment in early syphilis is worse than no treatment at all.

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DISCUSSION

DR. JOSEPH B. KILLEBREW (Chattanooga): I have enjoyed Dr. Hall's paper very much, and I think he has so adequately covered all the therapeutics of syphilis that there is very little for me to add. The very fact that we have so many drugs in use in the treatment of syphilis only convinces us that we are still inadequately equipped therapeutically in the handling of it. I think all of us will agree that the time will come when we will have more adequate therapeutics for the handling of these cases.

I think the error in treating syphilis has been more in the neglect of prolonging the treatment of cases than in the selectivity of drugs. We depend on the arsenicals more or less for immediate and rapid amelioration of symptoms and the other preparations for our prolonged and sustaining effect and the ultimate cure.

I will not prolong my remarks any further than to say that I enjoyed Dr. Hall's paper very much and I certainly think he has presented us a good outline of therapeutic measures available to us in the handling of these cases.

DR. E. GURNEY CLARK (Nashville): I think Dr. Hall's warning regarding the use of untried drugs is quite timely. Very often we are tempted to use drugs for which claims have been made when they have not been tried with the passage of time and use as have the older drugs that we have been using for a long time.

He has clearly pointed out in his discussion that the treatment of syphilis is not merely the mechanics of injecting a bismuth preparation, mercury, or arsphenamine, but that many other things have to be considered. The standardization of the treatment of syphilis is very difficult. Each case has to be judged on its own merits because of the various reactions that are met with, because of the virulence of the organism, because of the state of health, the age, and the life expectancy of the individual, because of the duration of the disease, and certain existing foci of the disease in the individual being treated. However, it can be standardized to some extent in that we can say, whatever drugs we might use, that in early syphilis, that is, syphilis under four years' duration, uncomplicated by any of the later manifestations, our best results are gotten by the use of some type of arsphenamine and heavy metal, bismuth or mercury, if you like, continuously, alternatingly over a period of a year and a half to two years. After four years of the disease are past and the late manifestations appear or the patient is in the latent stage of syphilis, we have to consider the individual even more.

In a person with latent syphilis, that is syphilis that can be diagnosed merely by the blood test, when there is no sign of central nervous system or cardiovascular system syphilis present, authorities believe that the long drawn out treatment of several years is not necessary, that even at the end of the second year the individual who has a positive test is in no more danger of clinical relapse than a person with a negative test.

The treatment of prenatal syphilis depends on the time discovered. If drugs are administered by the fifth month of pregnancy we know the person can be assured of normal delivery in ninety per cent of the cases. However, the ultimate control of syphilis is going to be in the finding of contacts of the new early cases. I must disagree somewhat with Dr. Hall that the search for contacts of individuals with syphilis is not practical. In clinical experience certainly we have found that searching for contacts is practical, that ninety per cent of the individuals who have early syphilis will give the names of their consorts, and that a large number of these individuals can be gotten in for treatment. With the use of the arsphenamines in early syphilis, along with bismuth and mercury, and the finding of new cases from the ones that have come to us, we can ultimately come to the control of the disease.

I have enjoyed Dr. Hall's paper very much.

DR. HOWARD KING (Nashville): Mr. Chairman and Members of the State Association: It would seem to me that no more important paper will perhaps be presented to this association at this time than that one which you have just heard from Dr. Hall. I say that in view of the national as well as our own state program which has been set forth for the control of this disease.

As you all know, the Advisory Council of our own state association is cooperating in the public health program for the control of syphilis, and for the first time in my life the nation and our state and the doctors have all come to a uniform agreement in regard to the method for standardization of the treatment of syphilis. Of course we all know this is not perfect, it cannot be perfect, but after five years or longer of profound study by the cooperative clinical group they have outlined a program of advice to us all in regard to the treatment of syphilis.

Dr. Hall in a very timely way has brought before this state association a lot of things that will be very valuable to you gentlemen, to us all, in the management of this disease. I can picture some doctors in the state of Tennessee with their offices in certain places equipped as they are who will have many pitfalls in treating the average case of syphilis; they will get into a lot of trouble and they will not have immediate help available. Dr. Hall has brought before you a lot of things that will help you in the management of syphilis.

I think, in view of the fact that the public health program is now going across in Tennessee, we all should pay close attention to the troubles, to the mistakes not only in the diagnosis, but in the treatment of syphilis, and in that way in a few years' time the state of Tennessee will be forward in the ranks in the control of this disease.

DR. E. R. HALL (closing): I want to thank the men for their discussion.

I have taken enough of your time, so I am not going to take up much more.

THE CHANGING PEDIATRIC PICTURE*

EUGENE ROSAMOND, M.D., Memphis

IN ANY GROUP of serious-minded business or professional men, the conversation, sooner or later, reverts to one subject—the economic outlook.

With this subject, the pediatrician is especially concerned, because, in addition to the loss of income due to the depressions, he has also suffered a materially narrowed field of endeavor. This has been due to the solution of many of his major problems and is a source of gratification. Pride of achievement, however, "butters no parsnips."

A third of a century of pediatric practice enables one to gain a clearer perspective of the changing pediatric picture, and since the individual experience makes up the mosaic whole, it is, perhaps, of interest to us all to recount briefly pioneer experience.

It has been charged that pediatrics is a decadent specialty. A former president of the American Academy called it simply a clearinghouse for the other specialties.

Is the economic outlook in pediatrics different than in the other specialties?

How has the picture changed and what is the future of pediatrics?

Having experienced the change, would I again choose the same specialty?

In 1905 when I graduated from a saddlebag doctor and with a half dozen newly-acquired certificates of study, painted "Practice Limited" on my new office door in Memphis' still uncompleted first skyscraper, I found a wide-open field. I was promptly advertised to my future clientele by the mild ridicule of those practicing the older branches of medicine, who thought children were, after all, only little men and women. They were glad, however, to turn over to me the difficult infant feeding cases, since orthodox authority at this time endorsed percentage methods worked out by algebraic formulae. It was a complicated business and as some of you know it kept both family and doctor away. But these cases alone provided a livelihood.

Diarrhoeas were prevalent eight months in the year. Remember, there were few screens and inadequate refrigeration. The high mortality rate and the woeful inadequacy of treatment methods made the pediatrician a welcome consultant. All of the desperate cases and most of the milder ones were gladly referred to us. Starvation treatment prolonged the period of illness and we numbered our cases by the score.

The family doctor might inspect a specimen stool, but the specialist had to inspect each and every diaper, saved and numbered. Consulting pediatricians adjusted eyeglasses and stirred them with a tongue depressor. This was the day of homemade eiweiss milk, of barley water, of cream dippers and whey and pap and tea, of bismuth and chalk and more bismuth. Opium was taboo because it supposedly prevented the elimination of toxins, but I feel good over the recollection that I never let one suffer and gripe and strain without it. One case of dysentery can keep a man busy and distracted. Imagine them by the dozen and most of them true dysenteries. Diarrhoeas alone provided the pediatrician a livelihood.

But, this was not the pediatrician's widest field. Every sore throat was a potential diphtheria, and every sore throat therefore demanded frequent inspection. Antitoxin was given at once to all suspicious cases, and smears and cultures made and followed up. The mild sore throat might furnish cultivated soil for the slow growth of diphtheria and the terror inspired by this one disease, as well as its real danger, made constant attention imperative throughout the whole course of a simple sore throat. Remember that in Germany, where better statistics were kept, we knew that in one year alone there were 122,000 deaths from diphtheria and that it killed an average of one child in every family once every five years. In the tenement districts and the alleys where the majority of the neglected diphtheria was found I naturally had to do my own intubations. Fees for such work in the homes of the well-to-do and in surrounding towns were, of course, big ones. The pediatrician was welcome to this work, for nobody else wanted it.

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*Presidential address, read before the Tennessee State Pediatric Society, Nashville, April 12, 1938.

The menace of diphtheria alone provided the pediatrician with a means of livelihood.

My first lumbar puncture, I remember, was done in the presence of several of Memphis' leading physicians and surgeons and was considered a major undertaking. Luckily it was a case of serous meningitis with almost continuous convulsions and with, of course, almost immediate cure. Lumbar punctures, intubations, the meningitides, and encephalitis, together with the exanthemata, kept us busy.

Consultation trips to near-by towns, which, thanks to kindly railroad schedules, kept one out only overnight, were almost daily occurrences. With the advent of the airplane and the increasing area of consultation territory these trips were at one time a major source of income.

Since upper respiratory infections constitute by far the greater number of all the illnesses of childhood, I have always felt that the pediatrician should defer to no one in his interest and attention to ears and nose and throat.

If I called my baby's doctor at 2:00 A.M. on a winter's night to a screaming child and a distracted mother I would rather he was trained to open an abscessed ear than to have to wait for a second specialist.

I opened my abscessed ears and intubated my true croups from necessity. I had the only electric otoscope and angled ear knife in a large part of three states and I still feel that the pediatrist put ears on the medical map.

When I occasionally found an abscessed ear in a very wealthy family who demanded a specialist for every different ill, and was requested to stay and assist in a paracentesis, I held the baby's head while a speculum was inserted, head mirror adjusted, and with a straight-handled knife and a bunch of knuckles obscuring the line of vision, a cautious poke was made. Those were the good old days!

Today, of course, no one appreciates more than I the splendid, competent otologist, but we have come a long way—both of us!

Today the picture has changed. Probably all the learned professions are becoming overcrowded. Certainly professional incomes are on the decline and professional standards are threatened. The cut-rate doctor is no longer a pariah.

In 1915 Memphis had four pediatricians. Today we have sixteen. Atlanta had four in 1915 and today has twenty-four. Washington had six in 1915 and today has forty-two. These figures are certainly suggestive of overcrowding.

Infant feeding is no longer a difficult problem, and the obstetrician now frequently contracts to give six months' care of the infant with his delivery fee. Boiled milk has almost put an end to the diarrhoeal diseases. Immunization has made diphtheria an infrequent disease.

Good roads and the automobile have brought the sick child to the pediatrician, and while these have increased the number of children who come to him, they have stopped the airplane trips, the special trains and the overnight trips that brought fees comparable to those earned by major operations, and that were no infrequent thing to all of us before the depression.

Inroads have been made on our income and on our field of practice by the welfare clinics, the hygiene stations, and the boards of health. These are no longer merely educational agencies. They are practicing medicine in competition with the pediatrician. Our taxes pay salaries and buy immunizing material. Pauper's oaths are not usually necessary to obtain anything from typhoid to rabies vaccine, from vaccination to a Mantoux test, provided one remembers to leave the limousine around the corner. However, these agencies are not wholly to blame for these abuses and the pediatrician really loses but little.

Prevention of illness is, after all, not a very remunerative type of practice.

The field has undoubtedly narrowed.

The upper respiratory infections now

constitute by far the greater number of sick children seen by the pediatrician, and this type case is not referred to him by the other specialists or by the general practitioner. In fact, there is very little that is referred to him anymore.

All the internists and diagnosticians to whom I frequently refer the mothers and fathers of my patients treat children. Internists and surgeons frequently are "teamed up" in and out of clinics and these surgeons refer their diagnostic problems in children to the internist.

The pediatric picture has changed. The field has materially narrowed and is overcrowded. The depression did things to us and to our incomes. Five years of new theories and experiments in government have brought more taxes and more depression.

What are we going to do about it?

What would we do if we were, in addition to being doctors, competent accountants, or artists, or artisans and our specialty did not give us an adequate financial return?

We would increase our field of endeavor. We would also paint a few pictures, take a concert tour or prepare a few income returns, make a cabinet, or otherwise use our abilities to make a few dollars on the side.

We *are* competent doctors. Many of us are competent surgeons. Why not increase the boundaries of our specialty? After all, those boundaries were drawn by others. We are general practitioners with an age limit. The children are our patients, and if we are competent to care for the particular ailment, why refer it?

After all, the old idea of specialism was to be a proficient doctor, as well as one mind could grasp such an enormous subject, and then to take that branch in which one found he possessed unusual proficiency and interest.

Within the field of pediatrics there should be room for surgeons, for endocrinologists, for diagnosticians, and for eye, ear, nose, and throat specialists.

One of the best and best known pediatrists of the Pacific Coast does his own abdominal surgery. Many do tonsillectomies and minor surgery. Some specialize in transfusions. Allergy is now a popular interest and endocrinology seems destined to match it in popularity. Surely, we can each find and adapt ourselves to our favorite and fitted lines of endeavor and broaden the pediatric field without claiming as general practitioners "such omniscience as is beyond the capacity of human mind."

Would I again take up pediatrics? If I were a young man, free to choose a specialty, I would never pass up the field of surgery with its disproportionately high fees. Orthopedic surgery I should consider the most promising field, gynecology next, and genitourinary third. Next, I should be an internist. If I had an independent income, I think the most interesting and most satisfying work would be that of a consulting pediatrist. I believe the pediatrician is as well competent as is the internist to practice geriatrics. The ills of the aged, like those of childhood, are most often due to exhaustion and poor nutrition.

Listen to what Dr. John Lovett Morse says: "It is evident that the opportunities for pediatricians will not be as great in the future as they have been in the past. Forty years ago pediatrics was a virgin field; now it is overcultivated. The other end of life now offers the greatest field for development. There are more old people than there used to be, and almost all of them are ill in some way or, at any rate, are wearing out; they like many visits; they are more interesting than children; the doctor is not blamed when they die; and the estate pays the bill. The parents of children are usually young, are just starting life, and are, consequently, short of money. Many of the aged have accumulated money. They are always willing to spend it in order to be comfortable and to live longer. My advice to young physicians is, therefore, to take up geriatrics, not pediatrics."

I would offer the further suggestion that we, if necessary to survive economically, broaden the field of our endeavor to include the care of the aged and of children, or that we join the other internists and abolish our age limit.

REPORT OF DELEGATES TO AMERICAN MEDICAL ASSOCIATION

THE SAN FRANCISCO SESSION OF THE AMERICAN MEDICAL ASSOCIATION

THE EIGHTY-NINTH convention of the American Medical Association had the largest Pacific Coast registration on record. Six thousand thirty-four physicians, surgeons, and specialists attended the convention. Upwards of fifty were from Tennessee, participated in its general sessions, meetings of its special sections, and viewed and studied the million dollar commercial exhibit assembled in the Civic Auditorium.

In the scientific sections the attendance was way beyond the capacity of even the large halls which had been assigned to them. The frequent complaint was that there was not room in the large auditoriums used for section meetings. Moreover, many of the topics which had been in the forefront of medical consideration during the past year were exhaustibly considered, including particularly blood dyscrasias, industrial diseases, and new methods in the treatment of psychiatric conditions.

The entertainment at San Francisco was all that could be desired and that connoisseurs could devise. There were various tours of the city and surrounding points of interest, including San Quentin prison, the Navy Hospital Ship Relief, and the various points of interest.

THE HOUSE OF DELEGATES

The one hundred seventy-five members of the House of Delegates, representing the medical profession of the respective forty-eight states and American possessions, convened promptly at 10 A.M., June 13, to listen to the summarizing of the association's activities of the past year and to the reports of the trustees and various committees and officers of the association as well as to the introduction of resolutions and the appointment of a personnel for the various committees and for the transaction of routine business.

At the meetings of the House of Delegates many matters were presented which have a vital bearing on the future of medical practice. All controversial subjects were thrashed out in reference committee meetings, thus avoiding discussions which would have been impractical in a general meeting.

The House of Delegates lost no time in getting down to considering the problem of medical economics. At this session as in previous sessions, covering a period of years, the problem of medical economics was paramount and received more consideration than any other problem. Tax-paid medicine or socialized medicine is our major present-day problem. Regimentation of the healing profession under paternalistic governmental auspices was hit hard in speech, report, and resolutions throughout the entire session of the House of Delegates.

Both the incoming and outgoing presidents of the association challenged all attempts to wrest from the profession control over its own services. The Board of Trustees hit recent agitation for tax-paid medicine by some grandiose scheme. The incoming president, Dr. Irving Abell, said: "The health of the nation neither should be made the football of politics nor consigned to the fallacious judgment of those who are untrained in the intricacies of its care." The retiring president, Dr. Upham, said: "A manifest determination of the medical profession to preserve the individual type of practice as best suited to this country and to maintain that practice on the highest possible plane is the ideal plan."

The speaker of the House of Delegates, Dr. Van Etten, reminding the delegates of their powers and responsibilities, said: "Every practitioner of medicine looks to you, and back of these practitioners are millions of people who are daily looking for the best in medical care, not merely adequate care or just any medical care that may be promised by fraternalistic bureaus, but a constantly improving medical care that a constantly improving medical profession can offer them."

The speaker further remarked: "I have faith in the success of the medical profession in riding out disgruntled criticism, and I believe that the general sanity of the American people will lead them to support an honest medical service such as is offered by the American Medical Association.

The report of the Board of Trustees is characterized by a very notable expansion of the activities of the various councils, bureaus, and departments of the association until, at times, available facilities have been seriously strained.

The Board of Trustees reported that the Federal Bureau of Internal Revenue had rescinded its decision that the American Medical Association does not come within the purview of the revenue act of 1936; that the association is not a scientific or educational corporation within the meaning of that act, but, rather, that it is a business organization and, therefore, not exempt from tax under the social security act. This means that the American Medical Association is now required to pay between $50,000 and $100,000 for the current year alone and that if the revenue department decides the law is retroactive the association may have to pay at last a quarter of a million dollars. An appeal from this decision has been filed, and it is hoped that an equitable decision with regard to the matter will eventually be reached.

The report of the secretary shows that on April 1, 1938, the number of members enrolled was 109,435, as compared to 105,460 on the corresponding date in 1937, an increase in membership of approximately 4,000 and in fellowship more than 2,000. The secretary also reported a steady growth of better organizations throughout the United States.

The Bureau of Medical Economics is conducting a survey of need for medical care, and it was suggested that in making this survey it is necessary that every state and county medical society heartily cooperate, as this information will be essential to determine the exact need for any change in the plan for medical practice.

Throughout the sessions of the House of Delegates the subject of medical care was much under discussion and it was repeatedly emphasized that it is not the high cost of medical care, but rather the general low economic status of a certain class of people, that makes them unable to purchase that care. It was repeatedly pointed out that the correction lies in the improvement of the economic status of these people and not in any change in medical practice or any form of government control of medical practice. When economic conditions are so adjusted that employment carries a living wage, then adequate medical care under our present setup will be available to all the people.

The Bureau of Medical Economics has also investigated the many forms of medical practice and has made extensive study of group hospitalization and workmen's compensation. They have also looked into the insurance medical directories and advise physicians not to be victimized by publishers of pay-as-you-enter insurance medical directories.

The Bureau of Legal Medicine and Legislation reports much activity during the past year supporting the enactment of the National Cancer Institute Act, the marihuana tax act, an act authorizing the bureau of mines to manufacture and sell helium for medical and other nongovernmental uses, and an act devolving on the federal trade commission jurisdiction over the advertising of foods, drugs, diagnostic therapeutic devices, and cosmetics.

The report of the Judicial Council gave some pertinent reminders to county and state medical societies. It advised strongly against any society passing specific resolutions for the purpose of controlling unethical practice; for instance, forbidding contract practice. The council foresaw only trouble from this method and advised proceedings against members under the general code of ethics. The council also suggested that the county and state medical societies should adopt a definite and standard procedure for hearings on ethical conduct.

The House of Delegates endorsed the visual standards for automobile drivers which were recommended by the Section on Ophthalmology.

FOR A DEPARTMENT OF PUBLIC HEALTH

The Federal Department of Public Welfare included in the recent government reorganization bill was condemned by the House of Delegates. In its place the delegates at San Francisco again approved a Cabinet Department of Health which should be directed by a medical man as secretary. It was deemed appropriate and essential that the delegates should point out specifically that they, and not the special societies or individuals anywhere, are the truly qualified representatives of medical practitioners in America and that their actions in San Francisco reflect the policies and beliefs of organized medicine in the United States.

It is probable there were more interested newspaper reporters from all parts of the country than ever before when the House of Delegates of the American Medical Association met in June, 1938.

Contrary to expectations of agitators who endeavor to incite disharmony and revolt among the physicians who represent the medical profession in the House of Delegates, the house displayed a singleness of purpose and soundness of attitude in its concern with the important question that came before it.

The American Medical Association emerged from the storm and stress at San Francisco without the split predicted in the headlines by the 430 episode, and it is still firmly established as to public policy upon the foundation of the famous ten principles. The fundamental principles adopted at Cleveland were reiterated as basic to a high quality of medical service.

The House of Delegates considered and adopted many and far-reaching resolutions. Several of the more important are as follows:

Dr. E. H. Skinner, Section on Radiology, presented a resolution having to do with the standards of practice of medicine in hospitals, attempting to define the status of the radiologist, the pathologist, and the anesthetist under hospital insurance plan. It was referred to the Council on Education and Hospitals which considered several resolutions which were offered from various sections of the country. The report of the Council on Medical Education and Hospitals is as follows:

The proposers of these resolutions, the delegates from the Massachusetts Medical Society, members of the California Medical Association, and others met with the council to express their views concerning the problems that concern the practice of medicine in hospitals by radiologists, pathologists, and anesthetists. These problems have been rendered more acute by the rapid extension of systems of group hospital insurance within the last few years. The council believes that these problems are of vital concern to the medical profession; that unwise decisions at this time may lead to consequences that would be disastrous to physicians and to the public alike, and that, therefore, a serious study should be made of existing relationships between hospitals and the physicians practicing therein, especially in the departments of anesthesia, radiology, pathology, and physical therapy, with a view to standardizing the relationship of these services to the hospitals and, where necessary, of reaffirming the principles of ethics involved.

The council recommends that it, jointly with the Bureau of Medical Economics, be authorized to undertake these studies and to confer with other interested agencies, in order that it may be in a position to establish ethical standards for the practice of medicine by physicians holding positions in hospitals and to prevent the exploitation of either the public or the profession. If during this study it is revealed that hospitals registered and approved by the council are exploiting the public or the profession, such approval may be revoked.

In conformity with the action of the House of Delegates a thorough study will be made during the coming year and proper recommendations will unquestionably be submitted to the House of Delegates at the 1939 session.

Until new recommendations and their adoptions by the House of Delegates, the policy of the American Medical Association in relationship to these matters remains unchanged. In the interval before final adoption it is well to remember the action taken by the House of Delegates in 1938, which reads:

"Since . . . some state and county medical societies may find it necessary to develop preferable procedures for supplying the needs where medical servics are insufficient or unavailable, it is urged that these medical societies be guided in the development of these procedures by the ten principles adopted by the House of Delegates in 1934. The application of these ten principles to specific suggestions or proposals for the organization of medical services may be facilitated by utilizing the method of direct cash payments to individual members. Your committee unanimously concurs in the suggestion and recommends that the American Medical Association adopt the principle that in any place or arrangement for the provision of medical services the benefits shall be paid in cash directly to the individual member. Thus, the direct control of medical services may be avoided. Cash benefits only will not disturb or alter the relations of patients, physicians, and hospitals."

Your committee has considered in detail that portion of the report of the Board of Trustees devoted to the Bureau of Medical Economics under the heading "Group Hospitalization" and also the separate statement of the Bureau of Medical Economics entitled "Group Hospitalization Insurance." Your committee commends the clarity and forcefulness of these statements and recommends that the ten principles adopted in 1934 as the policy of the American Medical Association be amplified by the addition of the following statement to Principle 4:

"If for any reason it is found desirable or necessary to include special medical services such as anesthesia, radiology, pathology or medical services provided by outpatient departments, these services may be included only on the condition that specified cash payments be made by the hospitalization organization directly to the subscribers for the cost of the services."

Disapproval of the inclusion of special medical services on a service basis in hospitalization insurance contracts will then be explicit, but a constructive alternative arrangement will be possible.

The action taken by the House of Delegates is clear-cut and definite and until modified is the point of view of the American Medical Association.

The lay press seems obsessed to put across the message to the effect that the American Medical Association and various groups within the profession oppose a hospital insurance system.

The attitude of the lay press is not in conformity with real facts. The medical profession is positively opposed to the various types of hospital insurance plans which violate state insurance laws governing medical practice and to those plans promoted for individual gain.

Many hospital service plans continue to ignore state medical practice acts which require persons to possess certain educational requirements and pass an examination before they are permitted to diagnose illness or treat the sick. Hospitals and hospital insurance corporations cannot fulfill these requirements. In most states the courts have therefore recognized that it is contrary to good public policy for a corporation to attempt to practice medicine by hiring physicians to practice medicine for the corporation. Physicians have always objected to those arrangements whereby a corporation (and most hospitals are corporations) attempts to sell the services of roentgenologists, pathologists, and anesthetists in a manner which results in a profit for the corporation or places the directors of the corporation in control of the personal relations between the patient and his physician. Similar undesirable relations are created when a corporation attempts to practice any profession. Consequently, the courts have also recognized that a corporation cannot practice law or hire lawyers to practice law for it. The same holds true of dentistry. These principles are maintained to give the individual person reasonable assurance that he will receive competent services from physicians, lawyers, and dentists.

The action taken by the House of Delegates in San Francisco holds that it is desirable to permit each person to receive the benefits from a hospital insurance system in cash so that he may purchase his own medical services from whatever source he may desire. When the individual himself pays for the services he receives, he can be assured of adequate and satisfactory services; otherwise he can refuse to make the payment. Under the cash-to-the-insured payment arrangement, which is the long-established method used by accident and health insurance companies, the insured person receives a definite number of dollars with which he can purchase services that are satisfactory to him. He does not have to accept whatever services may be offered by the insuring organization. The rights of the patient certainly are superior to those of the hospital, the corporation, or any other interest.

THE COMMITTEE ON PUBLIC RELATIONS

Resolutions suggesting the appointment of a Public Relations Committee which would be responsible to the House of Delegates rather than to the Board of Trustees and who would direct the public contact and be spokesman for the American Medical Association was introduced by delegates from Michigan and California. The Michigan resolutions proposed a change in by-laws which would provide for such a committee and place a limited amount of money at its disposal. Both resolutions were referred to the Reference Committee on Amendments to the Constitution and By-Laws and later to the joint committee of the Committee on Amendments to Constitution and By-Laws and the Committee on Legislation and Public Relations. During the entire interim between the first and last sessions of the House of Delegates the joint committee heard arguments pro and con and labored strenuously to bring about a proper and at the same time amicable solution of the problems presented by the resolutions.

From Wisconsin and Iowa came resolutions objecting to the policies followed by the Council on Foods in connection with butter and butter substitutes. In an earlier ruling the council decided that pure butter needs no approval and that butter substitutes do need certification. The butter industry contended that butter should be listed if the substitutes are to be listed. The Reference Committee recommended that the Council on Foods reestablish suitable standards for acceptance of butter and covering the advertisements thereof. The report of the committee was adopted.

A resolution from Illinois asking for an opinion on the ethical standard of physicians teaching in schools of chiropody was referred to a Reference Committee for consideration, the Reference Committee recommended that same be referred to the Judicial Council for review and subsequent report.

A resolution was introduced and approved which requested that the federal government be petitioned to create a Bureau of Health to consider all health matters which are not referable to the services of the army and navy.

A resolution was unanimously passed deploring the bombing of hospitals, Red Cross units, and innocent people in countries now at war.

Some of the more important activities passed by the House of Delegates may be listed as follows:

Reiterated its previous approval of the activities of its Committee on Contraception.

Approved a recommendation of the Judicial Council which among other things makes it unethical for any one to give direction for the use of rented radium, unless the person giving the direction actually sees the patient on whom the rented radium is to be used.

In executive session considered the evidence given and the resolutions proposed by the New Jersey delegates criticizing some activities of the editor of the *Journal of the American Medical Association.*

Received the address and accepted the invitation of Miss Josephine Roche, representing the President of the United States, to send an official representative of the association to the then forthcoming meeting of the Welfare Committee in Washington.

Elected Dr. Rudolph Matas of New Orleans as recipient of the distinguished service award; elected Dr. Rock Sleyster of Wisconsin president-elect; elected as vice-president Dr. Howard Morrow of California; elected speaker of the house Dr. H. H. Shoulders of Tennessee; elected vice-speaker Dr. R. W. Fouts of Nebraska.

The following places were selected for the next three annual meetings of the association: St. Louis in 1939, New City in 1940, and Cleveland in 1941.

THE EXTRAORDINARY "CALL" SESSION OF THE AMERICAN MEDICAL ASSOCIATION HOUSE OF DELEGATES IN CHICAGO SEPTEMBER 15 AND 16

The following proposals and recommendations were adopted by the House of Delegates at the extraordinary "call" session in Chicago as a result of the National Health Meeting held in Washington July 18-20, 1938, at which meeting it was proposed and five definite recommendations were made and plans drawn for asking the next congress in January to appropriate the sum of $885,000,000 annually for a period of ten years.

As long as the membership of organized medicine was not given the proper voice to discuss in reality any of the five recommendations, they were fully discussed by the delegates at the extraordinary session, not only on the floor, but in the various Reference Committee meetings, and finally summarized by the five chairmen of the committee of twenty-five, which recommendations and proposals herein follow:

1. *Under Recommendation I on Expansion of Public Health Services.*—(1) Your committee recommends the establishment of a federal department of health with a secretary who shall be a doctor of medicine and a member of the President's cabinet.

(2) The general principles outlined by the Technical Committee for the expansion of public health and maternal and child health services are approved, and the American Medical Association definitely seeks to cooperate in developing efficient and economical ways and means of putting into effect this recommendation.

(3) Any expenditures made for the expansion of public health and maternal and child health services should not include the treatment of disease except so far as this cannot be successfully accomplished through the private practitioner.

2. *Under Recommendation II on Expansion of Hospital Facilities.*—Your committee favors the expansion of general hospital facilities where need exists. The hospital situation would indicate that there is at present greater need for the use of existing hospital facilities than for additional hospitals.

Your committee heartily recommends the approval of the recommendation of the Technical Committee stressing the use of existing hospital facilities. The stability and efficiency of many existing church and voluntary hospitals could be assured by the payment to them of the costs of the necessary hospitalization of the medically indigent.

3. *Under Recommendation III on Medical Care for the Medically Needy.*—Your committee advocates recognition of the principle that the complete medical care of the indigent is a responsibility of the community, medical and allied professions, and that such care should be organized by local governmental units and supported by tax funds.

Since the indigent now constitute a large group in the population, your committee recognizes that the necessity for state aid for medical care may arise in poorer communities and the federal government may need to provide funds when the state is unable to meet these emergencies.

Reports of the Bureau of the Census, of the United States Public Health Service, and of life insurance companies show that great progress has been made in the United States in the reduction of morbidity and mortality among all classes of people. This reflects the good quality of medical care now provided. Your committee wishes to see continued and improved the methods and practices which have brought us to this present high plane.

Your committee wishes to see established well-coordinated programs in the various states in the nation for improvement of food, housing, and the other environmental conditions which have the greatest influence on the health of our citizens. Your committee wishes also to see established a definite and far-reaching public health program for the education and information of all the people in order that they make take advantage of the present medical service available in this country.

In the face of the vanishing support of philanthropy, the medical profession as a whole will welcome the appropriation of funds to provide medical care for the medically needy, provided, first, that the public welfare administrative procedures are simplified and coordinated; and, second, that the provision of medical services is arranged by responsible local public officials in cooperation with the local medical profession and its allied groups.

Your committee feels that in each state a system should be developed to meet the recommendation of the National Health Conference in conformity with its suggestion that "the role of the federal government should be principally that of giving financial and technical aid to the states in their development of sound programs through procedures largely of their own choice."

4. *Under Recommendation IV on a General Program of Medical Care.*—Your committee approves the principle of hospital service insurance which is being widely adopted throughout the country. It is susceptible of great expansion along sound lines, and your committee particularly recommends it as a community project. Experience in the operation of hospital service insurance or group hospitalization plans has demonstrated that these plans should confine themselves to provision of hospital facilities and should not include any type of medical care.

Your committee recognizes that health needs and means to supply such needs vary throughout the United States. Studies indicate that health needs are not identical in different localities, but that they usually depend on local conditions and therefore are primarily local problems. Your committee therefore encourages county or district medical secieties, with the approval of the state medical society of which each is a component part, to develop appropriate means to meet their local requirements.

In addition to insurance for hospitalization your committee believes it is practicable to develop cash indemnity insurance plans to cover, in whole or in part, the costs of emergency or prolonged illness. Agencies set up to provide such insurance should comply with state statutes and regulations to insure their soundness and financial responsibility and have the approval of the county and state medical societies under which they operate.

Your committee is not willing to foster any system of compulsory health insurance. Your committee is convinced that it is a complicated, bureaucratic system which has no place in a democratic state. It would undoubtedly set up a far-reaching tax system with great increase in the cost of government. That it would lend itself to political control and manipulation there is no doubt.

Your committee recognizes the soundness of the principles of workmen's compensation laws and recommends the expansion of such legislation to provide for meeting the costs of illness sustained as a result of employment in industry.

Your committee repeats its conviction that voluntary indemnity insurance may assist many income groups to finance their sickness costs without subsidy. Further development of group hospitalization and establishment of insurance plans on the indemnity principle to cover the cost of illness will assist in solution of these problems.

5. *Under Recommendation V on Insurance Against Loss of Wages During Sickness.*—In essence, the recommendation deals with compensation of loss of wages during sickness. Your committee unreservedly endorses this principle, as it has distinct influence toward recovery and tends to reduce permanent disability. It is, however, in the interest of good medical care that the attending physician be relieved of the duty

of certification of illness and of recovery, which function should be performed by a qualified medical employee of the disbursing agency.

6. To facilitate the accomplishment of these objectives, your committee recommends that a committee of not more than seven physicians representative of the practicing profession, under the chairmanship of Dr. Irving Abell, president of the American Medical Association, be appointed by the speaker to confer and consult with the proper federal representatives relative to the proposed national health program.

A PLAN FOR FINANCING THE COMPLETE MEDICAL CARE OF INDIGENT CITIZENS BY THE FEDERAL GOVERNMENT

ADOPTED BY THE HOUSE OF DELEGATES OF THE TENNESSEE STATE MEDICAL ASSOCIATION

YEARS AGO the House of Delegates of the American Medical Association adopted ten principles to which all plans for the delivery of medical care to the people should conform.

These principles were stated as follows:

First: All features of medical service in any method of medical practice should be under the control of the medical profession. No other body or individual is legally or educationally equipped to exercise such control.

Second: No third party must be permitted to come between the patient and his physician in any medical relation. All responsibility for the character of medical service must be borne by the profession.

Third: Patients must have absolute freedom to choose a legally qualified doctor of medicine who will serve them from among all those qualified to practice and who are willing to give service.

Fourth: The method of giving the service must retain a permanent, confidential relation between the patient and a "family physician." This relation must be the fundamental and dominating feature of any system.

Fifth: All medical phases of all institutions involved in the medical service should be under professional control, it being understood that hospital service and medical service should be considered separately. These institutions are but expansions of the equipment of the physician. He is the only one whom the laws of all nations recognize as competent to use them in the delivery of service. The medical profession alone can determine the adequacy and character of such institutions. Their value depends on their operation according to medical standards.

Sixth: However the cost of medical service may be distributed, the immediate cost should be borne by the patient if able to pay at the time the service is rendered.

Seventh: Medical service must have no connection with any cash benefits.

Eighth: Any form of medical service should include within its scope all legally qualified doctors of medicine of the locality covered by its operation who wish to give service under the conditions established.

Ninth: Systems for the relief of low income classes should be limited strictly to those below the "comfort level" standard of incomes.

Tenth: There should be no restrictions on treatment or prescribing not formulated and enforced by the organized medical profession.

Too much cannot be said on the merits of each of these ten principles.

The plan for medical care embodied in the following tentative draft conforms to all these principles.

PROPOSALS

INTRODUCTION

It is proposed that the Congress of the United States enact a statute in accord with the following principles:

I

MEDICAL INDIGENCY DEFINED AND CLASSIFIED

Indigency shall be defined, and those persons who are indigent, within the definition of this act, shall be classified as (a) completely indigent or (b) relatively indigent, in accordance with the following definition of the terms—indigent and relatively indigent.

The word "*indigent*" as used in this act is meant to refer to (1) a person who has no resources and no income, and (2) to a person who has an income, in money or non-money, or both, but whose income of all types and from all sources, when judiciously expended for the necessities of life such as food, clothing, and shelter, leaves no residue with which to pay for medical care.

The word "*relatively indigent*" refers to persons with an income, in money or nonmoney, or both, which when judiciously expended for the necessities of life leaves a residue which may be applied to the cost of medical care, which is too small in amount to cover the reasonable cost of hospital care, when needed, and too small to meet the costs of medical care at home in case of a serious or prolonged illness.

The eligibility of a person or family to the benefits provided for the relatively indigent can be determined by the proper agency when the injury or illness arises.

II

CERTIFICATION AND REGISTRATION OF INDIGENTS

Each citizen, at any time found to be indigent, with or without application therefor, shall be given a certificate, identifying him and those dependent upon him, under proper regulations to be determined by the administrative agency created by the Act, and reciting whether the holder is completely indigent or relatively indigent.

Such certificate shall show the date of its issuance and expiration, and the administrative agency established by the Act shall have the power and be charged with the responsibility of adopting and enforcing reasonable regulations for the prevention of fraudulent procurement or use thereof, including cancellation of any such certificate held by a person who is not in fact indigent or whose indigency is removed after issuance. Temporary certificate may be issued, renewable upon evidence of continued indigency.

III

THE PAYMENT OF THE COST

Provision shall be made for the payment by the administrative agency of the cost of necessary medical care rendered to the holder of a certificate of indigency, or to his dependents listed and identified thereon, by any practitioner licensed to attend and prescribe for sick persons by the state in which the service is rendered, or by any hospital (including clinics and laboratories) approved by such attendant practitioner, under the following conditions and limitations:

1. The medical care to be so provided for the holder of a certificate of complete indigency, and his dependents listed thereon, shall include whatever may be necessary to effect restoration to health, such as treatment by his attendant practitioner in home or office, hospital care, laboratory service, etc., with the end in view that all available resources and facilities for medical care may be made responsive to the needs of such persons.

2. The medical care to be so provided for the holder of a certificate of relative indigency, and his dependents, shall be limited to cases of illness or disability which are so prolonged, or are of such character, as to require institutional care, or some form of special or unusual treatment, the expense of which is in excess of the financial ability of the certificate holder except by depriving him or his dependents of necessary food, clothing, or housing.

CERTIFICATE COMPLETE AUTHORITY FOR COMPLETE CARE

3. The practitioner or hospital called upon by the holder of a certificate of complete indigency for medical care for himself or dependents shall render all necessary and reasonable care which the condition of the patient requires, without further authority from the agency and the agency shall be liable for the reasonable cost thereof.

LIMITED CARE ON CONDITIONS

4. The practitioner or hospital called upon by the holder of a certificate of relative indigency for medical care for himself or dependents shall promptly report the needs of the patient to the agency, under rules to be prescribed, and the agency shall be liable for the cost thereof only when expressly authorized; provided that in emergency cases failure to obtain prior authority shall not defeat such liability in proper cases subsequently approved.

INSTITUTIONS FOR MENTAL DISORDERS NOT AFFECTED

5. Persons requiring permanent or pro-

longed confinement because of mental disorders shall continue to be the responsibility of local governmental subdivisions as now.

Powers Vested in Administrative Agency to Make Regulations

6. The administrative agency created by the act shall be authorized to adopt regulations requiring prompt reports of medical care rendered to any certificate holder, for which compensation by the agency is expected, including report of diagnosis, number of calls, made and anticipated, reasons for hospitalization, and any other pertinent facts which will enable the agency to determine the reasonableness of or the necessity for the care furnished; and such reports may be required during the progress of the illness or disability under treatment. Such reports shall give especial consideration to conditions rendering preventive precautions desirable to avoid recurrence or repetition of such illness or disability, which the agency shall cause to be communicated to the proper public health authorities.

Powers to Fix Schedule of Fees

7. The administrative agency created by the act shall, after investigation, establish a schedule of fees, which may from time to time be changed, altered or modified in the discretion of the agency, which may be charged by practitioners or institutions for medical care furnished to certificate holders or their dependents. Such schedule may classify fees according to the population of communities in which medical care is rendered, or according to any other reasonable differential, local conditions always being considered.

Powers to Refuse Payment on Conditions

8. The administrative agency shall pay all reasonable fees submitted by practitioners or hospitals for medical care rendered to certificate holders, and their dependents, within the schedule adopted by the agency; provided that no such fee shall be paid for services found by the agency to have been unnecessary or unreasonable or which may have been rendered after notice from the agency that no further medical care is needed, or efficacious in a particular case, or when required reports have been wilfully omitted.

The decision of the agency that fees submitted by a practitioner or hospital shall not be paid, because of failure to comply with its regulations for reports, or because of the agency's determination that the services for which the fees are rendered were unnecessary or unreasonable, shall be final and conclusive, and not subject to review except for arbitrariness, illegality, or contumacy on the part of the agency's officers or agents.

9. The administrative agency shall be expressly authorized and directed:

(a) To investigate, through a competent medical authority, the adequacy of the medical care of certificate holders and their dependents; to consult on cases, when called upon by attendant practitioners or upon initiative of its medical officer when they have reason to believe that inadequate care is being furnished; to refer a patient to a diagnostic center for study when the diagnosis is obscure or there is difference of medical opinion thereon, and when the patient consents to such reference.

(b) To investigate conditions of fraud on the part of practitioners, hospitals, or certificate holders, when there is reasonable cause therefor, as in the case of suspected malingering, or unnecessary or excessive visits or treatments.

(c) To report to the proper state licensing or prosecuting authorities, and to the local professional association, any cases of unethical or illegal practices or conduct on the part of practitioners or hospitals in the care of certificate holders, which in any way may be brought to the attention of the agency.

IV

Providing Appointment of National Board

The act shall be administered by a National Board of Medical Care, consisting of thirteen members, appointed by the president. Two members of such board shall represent the opinion of social service workers; three members shall represent the opinion of the medical profession; one member opinion of hospital administration; and seven members the opinion of the taxpayer and patient.

Such board shall, through as many state, sectional or district and local boards as may be necessary, proceed to determine, register. and certificate the indigent citizens who may be entitled to the benefits of the act, and shall supervise and direct the activity of all such subordinate boards in such manner as it may provide. Such supervision and direction, under regulations adopted by the board, may be delegated to a National Director of Medical Care appointed by the board who shall devote his full time to such duties.

Providing for the Creation of Executive Under National Board

The National Board shall hold meetings at stated intervals and shall be paid a per diem and expenses. Extraordinary meetings will be held on the call of the Director. The schedule of fees and all policies of administration shall be determined and fixed by the National Board. This board will also determine what state, sectional and local boards are necessary, shall appoint them, determine their duties, and authorize the appointments of medical and administrative officers and employees.

Full-time county health departments as constituted at present, when possible, should be designated the local administrative agency for the area over which the department has jurisdiction.

In localities where full-time health departments do not exist, in a county or group of counties, steps should be taken to create such an administrative agency for the proper area.

A Discussion of the Effects of This Proposal if Adopted

The provisions of this proposal will accomplish the following results:

The same medical care that is available to nonindigent groups are made immediately available to indigent persons in the same community.

The financial distress of many hospitals and doctors due to the care given by them without adequate compensation to so many indigent people is relieved, as a result of receiving fees on some reasonable basis for the services rendered the indigent.

The construction and staffing of hospitals, where the need exists and the conditions warrant, is encouraged.

The experience and the knowledge of organizations, such as the Commonwealth Fund, are easily available to communities which have need of new hospital facilities. If the conditions are proper the full cooperation of the foundation is available.

The administration of all local institutions, both new and old, remain under local control and management.

The Distribution of Doctors and Hospitals

The most urgent complaint lodged against the present setup for medical care in the United States relates to the distribution of doctors and hospitals.

It is alleged that there are qualified doctors, who are idle in some areas, and on the other hand, areas without qualified doctors by reason of differences in the economic conditions of the people.

The extent to which these allegations are true is not known, definitely. However, the adoption of these proposals should correct the situation completely. It makes it possible for a doctor to earn a livelihood in communities whose population is adequate in number but too poor in financial resources, at the present time, to support a doctor.

In general, the effect should be to bring about an even distribution of doctors according to needs, without dependency upon the economic conditions of the people.

Communities and counties which now find it necessary to offer a subsidy in some form to obtain the services of a doctor would be relieved of the necessity for so doing.

It is assumed, of course, that the fee schedule fixed by the administrative authority will be commensurate with the cost of the care given in the locality where it is given, but the control vested in the authority will always be sufficient to prevent excessive or exorbitant costs.

Counties and municipalities which support, in whole or in part, hospitals for the indigent people of the community would be relieved of this tax burden.

Medical Care in the Home

It is becoming increasingly apparent that the importance *of institutions* in the delivery of medical care has been overemphasized, and the matter of *home care underemphasized.*

The medical profession recognizes that a vast majority of disabling illnesses can be treated properly in the home. It is also recognized that prompt treatment in the home results, very often, in the lowering of mortality and morbidity, with the added effect of reducing the cost of care all the way around.

For example, acute appendicitis is an important cause of death. The death rate from this condition, according to reliable figures, has increased in the last few years, notwithstanding the fact that the institutional facilities for the care of such cases have been multiplied and improved in the same period of years.

The prompt recognition of a case in the home, and the proper handling of the case promptly, means a simple operative procedure, a very short period of hospitalization and disability, and a very low mortality rate, with a *minimum of expense.*

The case that is neglected in the home until serious complications arise becomes a serious case, causing a long period of hospitalization and disability, a high mortality rate, and very expensive care, and some chronic disability in those who survive. The same experience is had with illnesses which do not require hospitalization.

Prompt home care in certain cases is of the utmost importance. The erection of institutions, however numerous and well financed, will not compensate for failure to provide care in the home.

The Effect on the General Practitioner of Medicine

The importance of the services of the general practitioner is recognized, and should be. The importance of the family physician has received sentimental tribute, but, up to now, no proposal has been made which would materially affect his status. Most proposals relate to the creation of institutions and official agencies by the government.

The sacrifice made by the general practitioner in delivering medical care to the indigent in the home is very great. This plan should reduce his economic difficulties and enable him to improve the service he renders by receiving reasonable pay for at least a part of his services to the indigent.

The plan preserves the principle of competition as a stimulus to faithful and efficient service to the patient and to the continued development in skill of the practitioner.

The Effect on the Specialist

The plan provides for complete medical care, and the services of the specialist are therefore automatically provided for in the cases where such services are needed.

The handling of the patient on the register would not differ in any way from the handling of the patient who pays his own bills. The only difference would be the fee schedule, the reporting of the illness, and the keeping of a record of the illness by the attending physician.

The Effect on the Public Health

The adoption of this plan should give to the public all the benefits possible from public health measures, and individual measures, for the prevention and care of disease.

Public Health Departments which give individual medical care to indigents would be relieved of such work. They would also be relieved of the work of administering immunizing agents such as typhoid vaccine, smallpox vaccine, etc. The Public Health Departments could devote all their time and energy to the enforcement of measures *for the protection of the public health*, and to the administration of this plan for medical care.

The Effect on the Program for the Eradication of Syphilis

It is recognized that the prompt recognition and treatment of the early cases of syphilis would have a tremendous effect on the reduction and the ultimate eradication of this disease.

It is commonly recognized that many cases of the disease are not treated, for the reason that many indigent persons will not report to a *free clinic* because of the fear that the condition will become generally known in the community. If the case can be handled in the privacy of a doctor's office, such persons will report for treatment.

Another difficulty has been that the patient stops treatment too early on account of the expense. Therefore, the syphilitic who is relatively indigent, and whose pride will not allow him to report to a public clinic for treatment, is and remains a menace so long as he is infectious to others. Public clinics, however well financed, will not be entirely effective.

The operation of this plan should make available complete treatment in the privacy of a physician's office to all who cannot afford to pay, as well as those who can pay, and thereby accomplish the greatest good to all, both in curative and in preventive medicine.

This plan, therefore, should remove every hindrance to the eradication of syphilis, except such hindrances as reside within the individual himself.

THE EFFECT ON MATERNITY AND PEDIATRIC SERVICE

Much energy and money has been directed toward the improvement of maternity and infant care in the United States. Little demonstrable improvement has been accomplished by the expenditures.

The operation of this plan would make available, to indigent groups and those relatively indigent, the same infant and obstetric care that is received by the more prosperous groups in the same community.

A number of situations might be considered in this connection, but these few should suffice to illustrate the advantages of this plan over other proposals for government intervention in the field of medical care.

COLLATERAL BENEFITS

There are many collateral benefits which should grow out of the operation of this plan for medical care: first, many sociologists have been disposed to neglect other sociological problems of urgent importance, and devote their efforts to agitating the question of medical care.

With adequate provisions made for the medical care of all indigent groups the capable sociologist would be free to devote himself to a thorough study of the question of indigency itself.

The persons on the indigency register should be studied and classified on the basis of the cause of the indigency in each individual case. It is recognized that there are many causes of poverty. Some of these reside in the individual, others outside of the individual. The extent to which each of the many factors is responsible for the conditions should be determined.

It is recognized that the death of a husband and father who provided well during life often leaves a widow and orphans who become indigent. It is also recognized that there are many people who are indigent, in good times and bad times, who have never been self-supporting at any time. These two cases are as wide apart as the poles in the classification of the indigent. The same treatment will not remedy both. They are to be dealt with on a different basis if success is to be achieved.

Certainly such a study should be made before the conclusion is reached and adopted that such conditions of indigency are due to our form of government.

An important duty of a sociologist should be that of aiding and stimulating indigents to become self-supporting and retire from the register of indigents.

THE ADMINISTRATION OF THIS PLAN

Full-time county health units as now constituted in many counties would be a suitable agency for the local administration of this plan. Such a tie-up between the public health agency and the facilities for medical care should result in a greater improvement in public health administration and in the medical care received by indigent groups. Undoubtedly the plan would stimulate and increase cooperation between the practitioners and public health officers.

Practitioners in attendance upon a case are required to report the illness to the local administrative agency.

If the disease happens to be contagious the proper executive measures can be taken at once by the executive authority.

Reports of the immunization treatments administered by the family physician to children would be automatic. This would afford a complete checkup on the extent to which the children of a community are immunized.

The operation then would place in the hands of local health authorities complete morbidity reports from week to week, in so far as registrants are concerned.

In the event a disease is prevalent which is due to environmental conditions this fact would become known to the health authorities immediately, and thus make possible executive action.

THE COST OF THIS PLAN

It is frankly admitted that no one can estimate the exact cost of the operation of this plan for two reasons:

(1) No one knows how many persons may qualify as indigent and relatively indigent.

(2) The fee schedule is not fixed in the act.

Some statisticians estimate that forty million persons in the United States are indigent. This estimate apparently is based entirely and alone upon the amount of cash income. This is a very false and misleading basis for the determination of indigency.

The definition of indigency in this proposal takes into account not only cash income but non-money income. It also takes into account the question as to whether the applicant for registration makes prudent expenditures of his income.

The number of people who may qualify as indigents under a specific definition cannot be determined in advance. Assuming, however, that there are forty million people who could qualify as indigents, the sum of eight hundred fifty millions of dollars would make available the sum of $21.25 to each one of the forty million persons. It would make available $106.25 for each family of five indigent persons.

The Committee on the Costs of Medical Care made the following estimate (Abstract of Publication No. 25, page 11.):

"A careful estimate has been made of the amounts and kinds of service necessary for the provision of adequate medical care to an average population, and the number of physicians, dentists, nurses, subsidiary personnel, and hospital beds, which would be required. On the basis of these data, it may be estimated that the cost of furnishing adequate medical care would be approximately $36.00 per capita, of which $10.70 would represent the cost of dental care.

"The committee has made studies of various organized medical units providing adequate or nearly adequate medical care. At these medical units the cost of furnishing care ranged from $11.64 to $26.43 per capita, exclusive of dentistry, public health service, and hospitalization of patients with tuberculosis or mental and nervous disease. On the basis of these findings it appears likely that a reasonably good level of medical care, with the specified exceptions, could be furnished for $20 per capita, or $82 per family per year. The cost of adequate dental service would probably amount to $10.70 per capita, or $44 per family."

According to this estimate, the sum of $850,000,000 would be ample to cover the cost of care to these forty million people under this plan.

An important factor to be considered in this computation is savings which would be effected. Large sums are already being spent by voluntary agencies and by the various units of government—municipalities, counties, states and the national government in financing medical care of various sorts. For example, moneys appropriated by cities and counties to support charity hospitals, or to finance the care given charity patients in other hospitals. The aggregate of these items amounts to many millions of dollars (over $300,000,000).

The sums spent by the state and federal

governments in financing individual medical care to crippled children; maternity and infant care; the treatment of syphilitics, etc., etc., all the sums thus spent could be saved and applied to the cost of care under one plan.

The savings thus accomplished would go far toward financing the cost of medical care of all types and forms under one unified and comprehensive plan.

The cost would fluctuate from year to year—according to the amount of illness and the number of indigents, etc.

It is predicted that the economic conditions of a large number of people in low income groups will be improved in the near future by an increase in their income. Such an event would reduce the number of indigents in proportion to the improvement, and thus reduce the cost of the plan.

These considerations give a fair idea of the present cost and possible future costs.

A COMPARISON OF CERTAIN FEATURES IN THIS PLAN WITH CERTAIN FEATURES OF THE PROPOSAL MADE BY THE INTERDEPARTMENTAL COMMITTEE

1. This proposal, in effect, is that indigent groups have available complete medical care in the channels and with the professional personnel, and institutions already created, for giving such care, and that the cost be paid by the federal government on a fee schedule fixed by the government.

The committee's proposal is that a vast sum of money be appropriated and placed to the credit of some federal agency to be expended or allocated to local institutions and agencies for various purposes and under conditions not stated.

It is indicated that the federal appropriations are to be *matched* by appropriations from states and counties. When such conditions are created it serves to invite the activities of political pressure groups and makes federal funds available to the communities (counties and states) which can raise the necessary funds with which to match the federal funds.

It is equally true that these provisions make the federal funds unavailable to the poor areas which cannot organize political pressure groups, nor furnish the money with which to match the federal appropriation, therefore, preventing aid from going to the areas which need aid most.

In this proposal the interest of the government in the indigent person is expressed directly to the indigent person in the form of an authorization which enables the individual to obtain any service he needs, when he needs it, from the physician or hospital of his choice. Hospitals and doctors would benefit only to the extent that they are paid for services rendered the indigent on a fee basis fixed by the government.

In the plan proposed by the Interdepartmental Committee the benefit to the indigent person must pass downward from a national agency to local institutions and agencies of one sort and another and finally downward to the indigent person. The extent to which the medical care needed by the indigent individual would be available to him is not stated, except that it is proposed that some local agencies for the delivery of medical care be created and others subsidized on some basis.

This plan is adaptable and flexible. Indigency is defined in the plan and is not left to the whims and caprice of some local administrative agent to define indigency in any way he or she may choose to do so.

The plan of the Interdepartmental Committee does not show just who is intended to be benefited. In fact, no detailed plan is provided. It is proposed that money be allocated to local hospitals, health departments, etc. In the event that money for medical care is allocated to health departments, that act would place health departments in the practice of medicine; a job for which few, if any, of them are entirely suited.

COMPARISON OF COSTS

The cost of complete care under this plan can be computed on the basis of studies already made.

The suggestion of the Interdepartmental Committee is that $850,000,000 be made available as a start toward the consummation of a complete plan costing many billions.

The plan here outlined is democratic in concept and application. It recognizes the rights and liberties of the individual person who is indigent—the right to decide such a vital matter as *who will operate on him.* It recognizes the fact that liberty has value —that it has value second only to life itself. It recognizes that in the past many men have placed a value on liberty even greater than life without it.

The proposal of the Interdepartmental Committee recognizes no such right. It proposes that medical care be planned and directed by some powerful federal agency, financed by large appropriations. The medical care received by the indigent person will be on such terms and conditions as are determined by the administrative agency.

These few comparisons should suffice to indicate the directions along which the people, both indigent and nonindigent, medical and nonmedical, taxpayers and nontaxpayers, should travel if the people of America are willing and ready to assume the burden of financing complete medical care to the population which is indigent.

The decision of the American people on this point must be the guiding factor as to what the future holds.

THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

Devoted to the Interests of the Medical Profession of Tennessee

Office of Publication, 508 Doctors Bldg., Nashville, Tenn.

Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 15, 1932.

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H. H. SHOULDERS, M.D., Editor and Secretary

OCTOBER, 1938

EDITORIAL

A Plan for Financing the Medical Care of Indigent Citizens by the Federal Government

A question is becoming increasingly apparent to medical men everywhere. The question is, "Shall the medical profession make the plans by which the taxpayers of the United States may finance in part, or in whole, medical care delivered to indigent citizens, or shall the plans be drafted for us by those not qualified to do so?"

The House of Delegates of the Tennessee State Medical Association feels that the medical profession should draft the plans, provided the taxpayers of the United States wish to finance such a plan. There is no accurate gauge as to the attitude of taxpayers on this question. Some polls of public opinion have been taken with results which indicate that a majority of the taxpayers are willing and ready to undertake the financing of this care. If such be the case then it is the duty of the medical profession to undertake the task of formulating the plans by which this may be done.

On another page of this issue of the JOURNAL will be found the plan adopted by the House of Delegates of the Tennessee State Medical Association.

The minutes of the proceedings of the extraordinary session of the House of Delegates of the American Medical Association were published in the *Journal of the American Medical Association* for September 24. We hope that every fellow of the association has read, and maybe reread, these proceedings.

The main subject of the call, of course, was the report of the Interdepartmental Committee to the Health Conference held in Washington in July.

Five recommendations were made by the Interdepartmental Committee. These were treated separately by the House of Delegates.

The more one ponders the question the more one is convinced that the Interdepartmental Committee really made only one recommendation. That recommendation might be stated as follows:

"It is recommended that the federal government and other governmental units appropriate vast sums of money and turn them over to a federal agency to be expended or allocated as the agency may determine in the general field of public health and medical care.

Public health departments, when properly administered, are capable of rendering a great public service. When improperly administered they are capable of doing great harm. If the personnel of federal and state health departments should be converted into a political pressure group to secure legislation which vests in these departments larger powers, patronage, and money to be used for purposes which are not within the sphere of public health, that act would constitute a prostitution of the high purposes for which these departments were created and have been financed for all the years of their existence.

It would not be necessary to make the above statement except for the fact that it has been seriously suggested by a high government official that the delivery of individual medical care become a function of the health departments. It was made to an organization of health workers. It apparently was applauded and has not been criticized by them.

Maternity care is an individual health problem if one ever existed.

One recommendation of the Interdepartmental Committee is that the sum of $95,000,000 be expended for maternity and infant care. No specific plan is suggested by which this vast sum of money would reach those who need the care.

It is reported that two million babies are born in the United States each year and that one million of these babies are born to families unable to finance the proper maternity and infant care.

The sum of $95,000,000 is equal to $95 per birth for one million births, provided the money goes directly for care to the people who need the care and, provided, further, that the entire sum is spent for care.

Under the Tennessee plan the women who are unable to finance their own care would be on the register of indigents and would have authority to employ the doctor of their choice. The doctor would deliver to them the care that is needed, whether home, hospital or nursing care. He would be paid on the basis of a fee schedule fixed by a federal board.

The sum of $95 per delivery is quite in excess of the average for this country. It certainly would be adequate.

In Tennessee about sixty thousand births occur each year. If one-half these mothers are unable to pay for care they would appear on the register of indigents. The sum of $95 per birth would amount to $2,850,000. This could be spent for medical care, nursing care, etc., for 30,000 maternity cases. The money goes for care, not for financing agencies and notions.

It is appropriate to ask the question, "How much of the millions that have been spent under the Shepherd-Towner Act ever reached a mother in the form of needed medical and nursing care?"

It would be interesting for some capable analyst to study that question for the purpose of determining the exact disposition of that money and results gotten.

The taxpayers have been liberal in their attitude toward the needy. There is serious question at the present moment as to whether the needy get the full benefit of the expenditures.

The above brief discussion gives opportunity for a comparison of the Tennessee proposal with the vague proposals submitted in regard to one item of service.

If the $95,000,000 were appropriated and expended for the creation of a large number of agencies of various sorts, can it be reasonably assumed that any considerable proportion of this vast sum of money would ever reach the mothers and infants in the form of needed care?

These are questions worth considering, not only by doctors, but by taxpayers, mothers' clubs—in fact, all groups interested in the question of maternity and infant care.

Medical Care in Politics

We doctors have striven to keep medical care out of the field of politics.

As a profession, we have sponsored the establishment of public health departments to perform the functions which only an agency, vested with the police powers of the state, can perform. We then have exerted every effort to keep these departments out of politics.

We have sponsored the creation of boards of examiners to pass upon the qualities of those who would engage in the practice of medicine. We did this in the public interest. We have endeavored to keep these out of politics.

In spite of our efforts, however, the question of medical care has been projected into the field of politics.

The question of medical care is now a political issue. However much we dislike to recognize the fact, we are compelled to recognize it. It has been made a political issue by an agency of the government.

We are now under threat of prosecution by one agency of the government for upholding ethical principles in medical practice.

Another agency of the government proposes to take money and power and use them both as it may see fit in the field of medical care.

We doctors are not trained in the art of politics, but each and every doctor has a clientele who have faith in his judgment and his integrity. The sum total of the influence that can be exerted by the practitioners of the United States constitutes the sum total of our political influence. We have no patronage. We must, therefore, inform ourselves to meet the issue. We must organize ourselves to meet the issue. We must fight as we never fought before for the interests of the sick people of the United States whose care is the whole purpose of our existence.

In our opinion, there is no doubt about the outcome unless we fold up and surrender to the dictates of those who would use the power of federal subsidy to establish their individual communistic notions.

RESOLUTIONS

Dr. Winfield Scott Farmer

The members of the Rutherford County and Stones River Academy of Medicine deeply regret the loss of Dr. W. S. Farmer, who was one of the leading physicians of Tennessee in his special branch of medicine. He was born May 17, 1866, in DeKalb County, Tennessee, lived there three years, then moved to Buffalo Valley, Tennessee. Attended Vanderbilt Medical School and graduated there. After several years of postgraduate work at a leading New York medical college he returned to Cookeville to resume his practice. He began the practice of medicine in 1890 in Buffalo Valley, in Putnam County. In 1916 he was promoted to the position of superintendent of the Central State Hospital for the Insane, a work that he took much interest in and was considered one of the leading men in neurology and psychiatry of the state. He held that position until his death in 1938.

Whereas this society has lost one of its best friends, whose passing away is deemed a great loss. He was an honorary member of this society. He was highly respected and loved by all who knew him. He was ethical and fair to the medical profession.

Therefore Be It Resolved, The members of this medical society express their sympathy and deep regret in the death of this noble and splendid physician.

Be It Further Resolved, That this resolution be spread on the minutes of the Rutherford County and Stones River Academy of Medicine and a copy be sent to his bereaved family with deepest sympathy from this society. Also a copy sent to the Journal of the Tennessee Medical Society.

(Signed) J. O. Kelton,
A. J. Jamison,
Matt B. Murfree.

NEWS NOTES AND COMMENTS

Dr. Marion I. Davis announces the opening of offices in the Bennie-Dillon Building, Nashville. Practice limited to dermatology and syphilology.

WOMAN'S AUXILIARY

President Mrs. H. E. Christenberry
Knoxville
President-elect Mrs. Matt Murfree
Murfreesboro
Press and Publicity Mrs. Frank Fessey
Nashville

Mrs. H. E. Christenberry, our state president, on September 21 presided over a called meeting of the state board of the auxiliary for the purpose of outlining the program for the year's work. Nineteen members were present, representing East, West, and Middle Tennessee. An enthusiastic cooperation and purpose was evidenced by those present, and we are confident that the auxiliary has outlined a year's work which will make the administration of Mrs. Christenberry an outstanding one in the history of the Tennessee auxiliary.

Again Tennessee lives up to her name of Pioneer State. This will be a grand surprise, the entire story of which we will relate in our next issue. It will permit you to again realize that Tennessee is indeed a "trail blazer" and that the women of our auxiliary merit the pride we have in them and their achievements.

Under the sponsorship of the Girl Scouts we had in Nashville on October 4 the First Lady of the land. I know that all who could not be present to hear her talk will regret their inability to be with us on this delightful occasion.

And now for an article on "Organization" by Mrs. Matt Murfree, president-elect of our state auxiliary.

ORGANIZATION

Getting the women interested is the main thing in organizing women's auxiliaries to the medical associations. Of course the medical society in each county must give its consent before an auxiliary can be organized, and we would do nothing contrary to its wishes. But this is mostly form. When the doctors of our county were approached on the subject, I noticed that before expressing an opinion each doctor asked his wife if she wanted to organize. Upon finding that their wives liked the idea, the men promptly gave their consent. If the women had not wanted to organize, permission would have been withheld.

In times past there was no doubt a type of man, and possibly a type of woman, too, who scoffed at women's clubs, but their objections were evidently ignored, and they no longer even dare voice an opinion. This is evidenced by the fact that women's organizations have increased and flourished in strength and numbers by leaps and bounds all over the country.

This is the day of organization. We rear our children through the Parent-Teacher Association; we raise our flowers through the garden clubs; we do our charity through the Community Chest; we conduct our spiritual life through the church; we cultivate our minds through literary clubs; we express our public sentiment through civic clubs; we seek our pleasure through golf clubs, card clubs, country clubs, and what not! In fact, nothing seems to be accomplished except by organized effort.

Some may still ask, "But why a woman's auxiliary to a medical association?" Simply this: many lasting and valuable contacts are made among the doctors' wives, and many vital things result in this way. More important still, there are several big objectives given the auxiliaries. Among these are socialized medicine, a big item; cancer control; *Hygeia* circulation; A. M. A. radio publicity; self-education in health; the domestic servant health certificate movement; and many others. Certainly an organized body of women standing together and standing firm on a movement thrashed out by the American Medical Association would be a mighty factor not lightly to be reckoned with. So why not give it a trial?

And now I ask you, what woman would want a higher office than to be of service to that attractive, lovable, deeply intellectual, highly delectable, glorious, glamorous body of men known as the Tennessee Medical Association?

CORNELIA W. MURFREE,
Chairman of Organization.

MEDICAL SOCIETIES

Davidson County:

September 13—"Medicine's Public Enemy No. 1," by Dr. L. E. Burch. Discussed by Dr. R. A. Barr.

September 20—"Cardiac Drugs: How They Work," by Dr. Tinsley Harrison. Discussed by Dr. Wm. R. Cate.

September 27—"A Discussion of the Proceedings of the Extraordinary Session of the House of Delegates of American Medical Association September 16," by Dr. H. H. Shoulders.

October 4—"Case Report: Subtotal Gastric Resection," by Dr. John T. Hart, Columbia. Discussed by Dr. L. W. Edwards.

"Case Report: Disgerminoma," by Dr. C. S. McMurray. Discussed by Dr. W. C. Dixon.

Dyer, Lake, and Crockett Counties:

The Dyer, Lake, and Crockett Counties Medical Society met in regular session. The following scientific program was very instructive:

1. "Radiation Therapy in Diseases of the Female Pelvis," by Dr. W. S. Lawrence, Memphis.
2. "Tumors of the Bladder: Diagnosis, Management, and Results of Treatment," by Dr. Thomas D. Moore, Memphis.
3. "The Physiologic Basis of Indigestion," by Dr. Lyle Motley, Memphis.

C. L. DENTON, *Secretary.*

Hamilton County:

September 22—"Chronic Eczema of Lower Extremities," by Dr. W. R. Buttram.

"What Are the Safe Limits of Conservatism in Surgery of the Female Pelvis?" by Dr. Raymond Wallace.

September 29—"Papain, Pitressin, and Prontylin in the Acute Abdomen," by Dr. Edward T. Newell.

"Progress of Cancer Research," by Dr. S. S. Marchbanks.

October 6—"Fifty Years of Practice," by Dr. F. B. Stapp.

"Recent Advances in Medicine," by Dr. F. E. Marsh.

October 13—"Traumatic Injuries to the Extremities," by Dr. E. E. Reisman, Jr.

"Wrist Injuries," by Dr. Earl R. Campbell.

Hardin, Lawrence, Lewis, Perry, and Wayne Counties:

The Five-County Medical Society met in Lawrenceburg on September 27. The following papers were read:

"The Hydrogen Ion Concentration of the Blood," by Dr. W. E. Boyce, Flatwoods. Discussion opened by Dr. Henry N. Moore, Savannah.

"Duodenal Ulcer—Treatment of Hemorrhage with Food," by Dr. Jack Witherspoon, Nashville.

"Poliomyelitis," by Dr. T. J. Stockard, Lawrenceburg.

"The Use of Antipneumococcic Serum in the Treatment of Pneumonia," by Dr. O. N. Bryan, Nashville. Discussed by Dr. L. D. Farragutt, Savannah.

"Dr. Leo C. Harris entertained visitors and members of the society at his home for luncheon in a very royal manner, which was greatly appreciated by all present.

Knox County:

September 20—"A Mole's-Eye View of Acute Abdominal Diseases," by Dr. R. A. Barr, Nashville.

September 27—Dr. O. S. Hauk gave a dinner for members of the Knox County Medical Society at the Eastern State Hospital. Following the dinner Drs. Hauk and B. F. Peterson showed some of the results by the use of insulin and metrazol in dementia praecox.

October 4—Drs. H. H. Shoulders, Nashville; Tom R. Barry, Knoxville; and Ralph W. Good, Cincinnati, were honored guests of the Knox County Medical Society at a dinner at the Hotel Andrew Johnson.

Robertson County:

Dr. W. B. Dye was host of his annual squirrel stew to the Robertson County Medical Society and a number of visiting physicians from near-by towns in Tennessee and Kentucky and some of his lay friends in the gymnasium of the Springfield High School on the evening of Tuesday, September 20.

Among those from Nashville were: Drs. C. S. McMurray, Arthur Sutherland, J. J. Ashby, Fort Bridges, E. E. Brown, Robert Brown, Leon Lanier, Harlan Tucker, W. J. Core, O. N. Bryan, W. A. Bryan, Paul DeWitt, R. J. Warner, Herman Spitz, J. P. Keller, M. B. Davis, R. W. Billington, W. K. Foster, Charles Trabue, Pleas Rogers, L. S. Love, and W. W. Winters; Thomasville, Dr. Frank Harris; Goodlettsville, Drs. M. B. Garner, S. J. Fentress; Franklin, Kentucky, Drs. W. L. Vicker and N. C. Witt; Ashland City, Dr. Frank P. Pitt; Guthrie, Kentucky, Dr. E. M. Frey; Clarksville, Drs. Frank Runyon and Bryce Runyon; Ridgetop, Dr. W. S. Rude; Springfield, Drs. W. W. Porter, W. F. Fyke, R. D. Moore, C. M. Banks, A. R. Kempf, J. S. Freeman, and J. H. Padfield.

Shelby County:

October 4—"The Physiological Basis for Administration of Pure Oxygen in Anoxia," by Dr. Paul Smith.

"Therapeutic Uses of Oxygen," by Dr. W. C. Chaney.

"Description of the Mechanical Considerations of Apparatus Used in Oxygen Therapy," by Mr. J. I. Banash, consulting engineer, former president, National Safety Council, Chicago, Illinois.

STUDY OF THE NEED AND SUPPLY OF MEDICAL CARE

SECRETARIES' REPORTS

"Any lack of medical care in this community is due to failure of patients to avail themselves of existing facilities."—Sullivan-Johnson County.

"Many people who cannot afford adequate medical care will not go to a free clinic because of the 'stigma' attached to so doing."—Sullivan-Johnson County.

"For fifteen years ample medical services have been available for all who applied."—Sullivan-Johnson County.

"A large group of diseases are nutritional rather than medical problems."—Sullivan-Johnson County.

"One of the most important needs in this locality is a more efficient system of eliminating from charity those who are able to pay at least a small fee."—Sullivan-Johnson County.

"I have been unable so far to secure any blanks from the physicians to whom they were distributed, but it is my plan to make a personal contact with each doctor in the county within the next ten days, telling him the survey is for us physicians and is not for the benefit of some distant agency and I can guarantee a report within at least three weeks. Sorry to say some physicians will growl and grumble about state medicine and forces from without, but are unwilling to take up arms actually and directly to fight the very thing they so heartily condemn."

——————*Secretary.*

In Sullivan County the nearest doctor is not more than seven miles from the patient.

"I have sent out all the forms 1F to all the physicians and dentists in the area and I have had returned to me exactly five out of the thirty-five sent out. Now you know this will not do. There is a terrible indifference to these matters and I will be darned if I know how to stimulate interest when there is none at all."

"Thirty or forty 1F forms sent out; five or six returned."

"Extreme indifference and no committee appointed."

Four secretaries report no plans for making the survey—no committee appointed—and one secretary asks what it is all about.

"Every physician and dentist has been supplied with forms. Three dentists and two physicians have returned forms."

Difficulties met by survey committees:

"Let George do it."

"Getting returns."

"Tediousness of questions asked."

"Lack of interest."

"Lack of cooperation."

"But in summarizing the work and in thinking it all over I am impressed by one or two points tremendously. First, in this city and county with about 350,000 inhabitants if there is *one single individual who needs medical attention and who does not receive it the sole reason is it is not asked for.* Now that is *something.* Second, there are thousands receiving medical attention free who can pay something who are now paying *nothing*, and hundreds who can pay reasonable fees who are now paying nothing."—Shelby County.

"The society has no definite plan." Hence nothing done.

"Our county voted *not* to carry on the survey."

"Did not know we were supposed to have a survey committee."

On September 28 we sent every county secretary a letter asking the progress of the survey. Eighteen replies have been received. Two counties have completed their surveys. The above quotations are from the replies. We hope to hear from other secretaries soon.

Washington County:

October 6—"Pellagra," by Dr. W. M. Bevis. Discussed by Drs. Crouch and McFaddin.

"Vaginal Approach to Pelvic Surgery," by Dr. Paul T. McBee. Discussed by Drs. Fisher and Long.

OTHER MEDICAL SOCIETIES

The East Tennessee Medical Society met on October 4 at Clinton.

The Southern Medical Association will meet in Oklahoma City, November 15-18. Advance information proves to us that the meeting will be up to its high standard set by the association.

Scientific papers, sectional and college meetings, commercial and scientific exhibits, hotel accommodations, and auditorium space will, with Oklahoma hospitality, result in a meeting well worth the price to all who can attend.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Building, Nashville

The Use of Inert Gases in Anesthesia Atmosphere: Relationship to the Problem of Postoperative Pulmonary Complications. G. E. Burford. Current Researches in Anesthesia and Analgesia, September-October, 1938.

Atelectasis is an important and serious postoperative complication. Due to the marked reduction of respiration in abdominal operations, sometimes as much as seventy-nine per cent in upper abdominal operations, it is easy for obstruction of the bronchial tract to take place. Atelectasis is not only caused by the absorption of gases behind an obstruction, but it may be caused by the rapid absorption of the usual gases of anesthesia such as carbon dioxide, oxygen, ethylene, nitrous oxide, cyclopropane, and ether where no obstruction exists.

This type of morbidity had been noted, but little attention had been paid to it, as it was so uncommon before the widespread use of cyclopropane. Several cases of massive collapse of one or both lungs resulting in death on the table or immediately afterwards following the administration of cyclopropane have been reported. The author in searching the literature found three similar cases following other anesthetics and reports another case in a noncyclopropane anesthesia. This case received avertin and ethylene, and respiration failed at end of operation and the pulse ceased shortly afterwards. Autopsy showed left lung completely collapsed.

The use of some inert gas that is slowly absorbed is a forward step in solving the problem of reducing pulmonary complications following surgery and anesthesia. Inert and slowly absorbable gases such as nitrogen, hydrogen, and helium are considered available for this purpose. These gases require twelve to twenty-six hours for complete absorption. Helium presents the most interesting possibilities.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

Gonadotropic Substance in Treatment of Acne. G. E. Williams and R. Nomland. Journal of American Medical Association, August 21, 1937.

Williams and Nomland administered the gonadotropic substance from the urine of pregnant women to twenty patients with acne. Nineteen of these were kept on topical, hygienic, and dietary regime similar to those of the treated group, which were given injections of sterile water instead of gonadotropic substance. Eighty-five per cent of those given gonadotropic substance showed moderate to marked improvement, while seventy-eight per cent of the control group given sterile water were similarly improved. They therefore concluded that improvement resulted from other remedies given and that a deficiency of the gonadotropic hormone is not an important etiologic factor in acne.

"Acne Mixed" Undenatured Bacterial Antigen in Treatment of Acne Vulgaris. Maurice J. Costello, M.D., and J. Charles Washburn, M.D., New York. Archives of Dermatology and Syphilology, September, 1938.

The authors employed an "acne mixed" undenatured bacterial antigen prepared according to Kruger's method. Forty patients were treated, twenty-three males and seventeen females, varying from fifteen to twenty-four years of age. The patients received an average of sixteen injections and a total average dose of thirteen cubic centimeters. None of the patients was improved and five were made worse.

OBSTETRICS AND GYNECOLOGY

By Hamilton V. Gayden, M.D.
Suite 234 Doctors Building, Nashville

A Study of 738 Cases of Uterine Bleeding in Conditions Other Than Pregnancy. Frederick Weintraub. American Journal of Obstetrics and Gynecology, September, 1938.

In a series of 4,421 admissions on the gynecologic service of a general hospital, abnormal uterine bleeding due to conditions unrelated to pregnancy was present in 738 patients (16.6 per cent). The commonest single cause of bleeding in the 738 cases was fibromyoma which occurred in 340 (forty-six per cent). Though supravaginal hysterectomy was the procedure most commonly employed, the impression gained has been that radium insertion on account of its safety, efficiency, technical simplicity, and economy of time and money will narrow the field of major surgery in the treatment of the fibroid uterus. Fibroids larger than a three and one-half months gravid uterus and those undergoing degenerative changes or complicated by pelvic inflammatory disease are not suitable for radiation. Myomectomy, single or multiple, is the procedure of choice in younger women.

Next in frequency to fibromyoma as the cause of bleeding was endometrial hyperplasia, which occurred in 175 patients (23.7 per cent). Simple curettage in younger subjects yielded good results in the vast majority of patients, while curettage with radium insertion in the menopausal group yielded excellent results.

Next in frequency was fibrosis uteri which occurred in sixty-eight patients (9.2 per cent). The best results were achieved in the menopausal group in which the treatment par excellence is curettage and 1,500 mc. hr. of radiation with the element inserted in the fundal area of the uterus. It is believed that hysterectomy should not be performed except in those rare instances in which radium has failed. There was no fatality following the use of radium in fibromyoma, endometrial hyperplasia, and fibrosis. With hysterectomy, the results were less favorable.

The total number of malignant neoplasms of the reproductive organs was twenty-eight (3.7 per cent). A relative immunity to carcinoma of the cervix was noted in Jewish patients. No such immunity was evident with respect to malignant neoplasms of the corpus and ovary. No instance of malignancy was observed in forty-nine polpys (6.6 per cent), of which forty-three were cervical and six uterine.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Notes on Tenon's Capsule and Its Histologic Significance. Jacques Mawas. American Journal of Ophthalmology, September, 1938.

Microscopic sections of an entire human orbit, fixed in celloidin, show no evidence of the Tenon's capsule as classically described. There is no capsule as a separate entity or a space between the sclera and the rest of the orbital contents. The orbit is traversed by a supporting meshwork of partitions made up of orbital connective tissue, with condensations around the larger vessels, the ciliary nerves, and the optic nerve. This meshwork is denser around the sclera, but in no way forms a capsule or sheath. Sections show globules of intraorbital fat in direct contact with the sclera. The author feels existing misconceptions have arisen through dissection methods in which each portion has been isolated in preserved cadavers, rather than studying the orbital contents in their undisturbed relationship. Two photomicrographs demonstrate the absence of a fascia and seem to disprove the current conception of Tenon's capsule as demonstrated by Whitnall and others.

PEDIATRICS

By John M. Lee, M.D.
Doctors Building, Nashville

Sulfanilamide and Serum in the Treatment and Prophylaxis of Scarlet Fever. Wallace Sako, M.D.; P. F. Dwan, M.D.; and E. S. Platou, M.D., Minneapolis. Journal of American Medical Association, 111: 995-997, September 10, 1938.

The various theories of the mode of action of sulfanilamide are discussed. A series of 100 cases of scarlet fever treated with sulfanilamide during 1937-1938 is compared with a similar number of controls who did not receive the drug. The two series ran concurrently and were comparable with respect to age, severity, and duration of the disease prior to treatment.

The drug was administered orally except to patients with nausea or extreme toxemia. The latter were given an initial large dose subcutaneously in one per cent normal saline, the dose being 0.05 gram per pound of body weight, and a maintenance dose of 0.03 gram per pound in twenty-four hours. The dosage was gradually decreased, but was continued on an average of twelve days. Two cases developed leucopenia and two cases developed fever and a rash, and in these the drug was discontinued.

In the sulfanilamide treated cases eight per cent developed complications; in the control series forty-one per cent developed complications. The rate of recovery from toxemia was the same in both groups. Those treated with serum were relieved of toxic symptoms more promptly than the drug-treated cases.

The value of human convalescent blood serum is compared with commercial scarlet fever antitoxin. The authors feel that in severe cases serum as an adjunct to sulfanilamide is desirable.

Human convalescent blood serum and commercial scarlet fever antitoxin are discussed as prophylactic agents. Several cases are cited where scarlet fever developed in patients receiving these preparations for prevention. To determine the value of sulfanilamide as a prophylactic agent, sixty patients in intimate contact with scarlet fever were given the drug and none developed the disease. Since this number is too small from which conclusions may be drawn, it is not recommended that it be used routinely as a prophylactic until more is known about the mode of action, toxic or allergic effects and dosage.

It is believed by the authors that early massive intravenous serum therapy to combat toxemia combined with continued large doses of sulfanilamide seems to be the most efficacious treatment for scarlet fever.

ROENTGENOLOGY

By Franklin B. Bogart, M.D.
Medical Arts Building, Chattanooga

The Relation of the Presenting Symptoms to the Selection of the Method of Treatment in Uterine Myoma. Henry Schmitz. Am. J. R. and R. T., Vol. 39, No. 6, p. 849, June, 1938.

A brief review of the clinical aspects of uterine myomas is given in which it is pointed out that they may not cause any symptoms or may cause either menorrhagia, metrorrhagia, pain, or a combination of these symptoms.

Menorrhagia or hypermenorrhea results (a) from disturbances of endocrine functions, such as hypersecretion of prolan A and estrin, hyposecretion of prolan B and progestin, and rarely hypofunction of the thyroid gland or hyperfunction of the adrenal cortex; (b) from the loss of contractility of the myometrium due to hypoplasia, atony, and intramural and sessile submucous myomata.

When myomas occur in young women and are located where they can be removed without destroying the ability to bear children, they should be removed surgically. Surgical removal is also indicated when myomas produce symptoms in women under forty years of age, and it is desirable to preserve the function of the ovaries.

In women between forty and fifty-five or sixty, irradiation is the method of choice.

When myomas produce symptoms in old women, who are well past the menopause, they are best handled by surgery.

Needless to say, myomas producing no symptoms require no treatment unless they occur in young women, and are so placed that they can be removed surgically, and their presence might possibly interfere with pregnancy.

While it is true that myomas occurring between forty and fifty-five, which are treated by irradiation, do not always disappear entirely, the symptoms are relieved in practically 100 per cent of the cases. Radium may be used in fibroids no larger than a twelve-week pregnancy and roentgen rays may be used with tumors up to the size of a six-month pregnancy.

The cases which have a great deal of pain, and who have other symptoms suggestive of inflammatory changes, had best be treated surgically, because these cases so often show torsion with resulting degenerative changes and possible malignant changes. A definite diagnosis can often only be made at operation.

Replacement glandular therapy should of course be used where indicated.

While it is necessary to select cases properly, the majority of cases requiring treatment will occur between the ages of forty and fifty-five and can be adequately handled by irradiation.

SURGERY—GENERAL AND ABDOMINAL

By Battle Malone, II, M.D.
1400 Monroe Avenue, Memphis

Mechanical Intestinal Obstruction Complicating Pelvic Inflammatory Disease. Murry H. Levine, M.D., and George Blinick, M.D. Archives of Surgery, September, 1938.

The infrequency of intestinal obstruction caused by gynecologic disease is emphasized in a brief review of the literature. Three cases of pelvic inflammatory diseases complicated by mechanical obstruction are reported.

Regarding etiology and pathogenesis, bands of adhesions result from pelvic peritonitis, whether post, abortal, or gonorrheal, which may later produce an obstruction. Pelvic peritonitis may extend to produce a generalized peritonitis. The mechanism of the formation of adhesions is outlined. The symptoms of this condition are similar to those of acute intestinal obstruction from any cause—sudden onset of vomiting, distention, cramplike pain which is unlike the unremitting pain caused by salpingitis. Roentgen examination of the abdomen reveals "step ladder" pattern gas and fluid levels in the small gut. Obstruction usually occurs while the inflammatory process is subsiding. Difficulty may be encountered in differentiating this condition from paralytic ileus since both conditions manifest themselves by distention, tympanites, constipation, vomiting, and signs of peritoneal irritation. However, the local and general symptoms of the acute pelvic inflammation have subsided or are subsiding when acute intestinal obstruction occurs. A sudden recurrence of acute symptoms, with cramplike pain, vomiting, and distention, should make one suspicious of a mechanical obstruction.

The authors use, in all cases of ileus, duodenal drainage with a Levine tube and a Harris drip for both diagnostic and therapeutic purposes. With paralytic ileus there is sufficient peristalsis to allow some return of fecal material and gas through the drip; whereas in mechanical obstruction there is no return of gas or fecal matter. Also liquid petrolatum may be introduced through the Levine tube at hourly intervals and some of this will be recovered in the drip if the condition is due to paralytic ileus.

The prognosis is directly proportional to the time elapsing between the occurrence of the obstruction and its release. Surgery should be limited to a release of the obstruction with a minimum of manipulation.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.
By G. A. Williamson, Jr., M.D
Medical Building, Knoxville

Endometriosis of the Bladder. Payson Stone Adams. Journal of Urology, September, 1938.

Endometriosis of the bladder is comparatively rare, and is frequently confused with other vesical lesions, particularly malignant tumors.

Observers are not in agreement as to the genesis and dissemination of endometrial tissue, Sampson's theory being that pieces of endometrium are regurgitated in the menstrual blood back through the tubes, and adhere and grow on the pelvic viscera. He also admits the possibility of invasion through

(*Continued on page 424*)

LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

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the same channels as malignant tumors. Others advance the theory of abnormal development of the celomic epithelium.

Judd reported the first case of endometriosis involving the urinary bladder in 1921, thirty cases in all being reported to date. Nine were secondary to involvement of the ovaries, and the remainder were primary.

This author reports one case in detail, outlining the symptoms and treatment.

The symptoms depend upon the extent and location of the lesion in the bladder. The most common symptoms are frequency, dysuria, and hematuria. These appear several days before menstruation, persist during the flow, and usually continue for a day or two after its cessation.

Hematuria is usually microscopic. The symptoms tend to progress, and may be associated with a pelvic mass and dysmenorrhea. The tumor usually involves the fundus, and upon cystoscopic examination, usually appears circumscribed, elevated, with a bluish, cystic appearance. The tumors are single and seldom ulcerated.

After the menopause the treatment usually consists of sterilization (either by X-ray or oophorectomy). In patients before the menopausal age, resection of the tumor is indicated. The results are usually good.

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OFFICE OF PUBLICATION, 508 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXXI — November, 1938 — No. 11

SURGICAL LESIONS OF THE COLON*

R. L. SANDERS, M.D., Memphis

TO DO FULL justice to the subject of surgical lesions of the colon is obviously impossible within these limited pages. The author will therefore confine his remarks to a brief discussion of nonspecific segmental enteritis, benign lipomata, and, in particular, to carcinomata.

SEGMENTAL ENTERITIS

According to the general concept, ulcerative colitis is a progressive disease of the mucous coats of the bowel, probably of an infectious nature, which may be arrested at any point in its course, or may continue, ultimately to invade the entire large bowel. It is believed that in ninety per cent of the cases the lesion begins in the sigmoid and rectum, advancing upward; according to a number of authors, it may extend even so far as the cecum and, by a process of "backwash," involve the terminal ileum. In the remaining ten per cent of cases, other portions of the colon are primarily affected, the process here tending to extend both distally and proximally. Growth usually is retarded at the flexures. The disease is marked by remissions, but healing seldom takes place spontaneously.

Pathology.—The mucosa of the bowel is at first superficially ulcerated, the submucosa may then become involved in the suppurative process and, finally, the entire wall may be infiltrated and thickened and even the serosa scarred. In advanced cases, polypoid hyperplasia may characterize the lesion. Perforation and fistula formation are not common, especially in the right half of the colon.

Symptoms and Diagnosis.—The principal features of segmental enteritis, or ulcerative colitis, of the right half of the colon are diarrhea, fever, progressive weight loss, and asthenia, anemia, and abdominal cramps. A mass may also be palpable. Joint pains are occasionally associated. Lesions of the left half present these same signs, although usually in a more aggravated form. The diarrhea is more severe, the stools generally being purulent and bloody; the temperature is often high, particularly in the afternoon. Nausea and vomiting may be additional symptoms. Sigmoidoscopy will be of value in the study of lesions in this region, but is of little or no value when the disease is on the right.

A differential diagnosis should be made between ileitis, carcinoma, and amebic colitis. The first two may be distinguished by the roentgenogram, the last by the stool test.

Treatment.—Purely medical treatment of segmental enteritis has been disappointing; surgical extirpation of the diseased segment of the bowel has proved the only adequate means of effecting a cure.

When the process is confined to the right half of the colon, the surgical approach is much more satisfactory. After thorough preoperative treatment, the bowel is explored and the limits of the resection determined. The terminal ileum is then divided well above the lesion, and an end-to-side ileo-transverse-colostomy done as the first stage in the operative procedure. Two or three weeks later, if the patient's progress warrants, the incision is reopened, and the right half of the colon and the terminal ileum are resected to a point well beyond the ulcerative zone, leaving only a small portion of the transverse colon, comparable to a cecum. By this method, the normal function of the bowel is undisturbed.

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*Read before the Tennessee State Medical Association, Nashville, April 12, 13, 14, 1938.

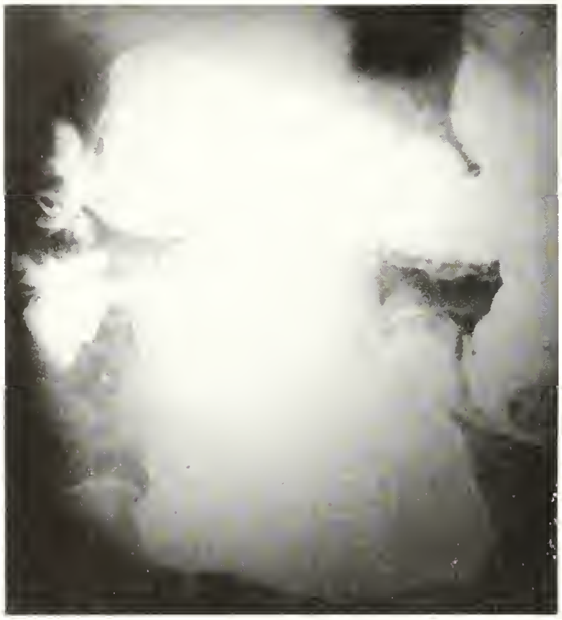

Fig. 1. Roentgenogram after barium enema, showing extensive filling defect of cecum and ascending colon, corresponding to the large tumor; also a less marked defect in distal third of transverse colon, where the second carcinomatous lesion was found. This is case 2 reported under carcinoma of the colon.

When the left half of the colon is involved in the pathologic process, it often becomes necessary to resect the entire colon, and even the rectum, to stop the remorseless ravages of the disease. In such cases, an artificial anus is left and the continence of the bowel function is lost, constituting a real calamity in every case, especially for a condition other than cancer.

The following case presents an illustration of segmental enteritis of the right half of the colon. The symptoms, though not extreme, were sufficiently disabling to justify the risk of partial colectomy in two stages. This patient was referred to the author by Dr. Henry Rudner of Memphis.

Case Report

A. B. R., male, age fifty-four years, had previously been in good health except for an attack of typhoid fever at thirty-five years of age. His present illness had begun fourteen months earlier, with symptoms of loss of appetite, soreness of the mouth and gums, a feeling of general lassitude, and considerable weight loss. Nine months before his admission to the hospital he developed abdominal pain of a colicky nature. Bowel movements were persistently loose, and sometimes numbered four or five a day. The stools contained mucus and some blood. As these conditions grew worse, he lost thirty pounds in weight. Subsequently, a tumor mass was discovered within the right abdomen.

Examination.—The patient presented a moderately emaciated appearance. His blood pressure was 108/72. The lungs and heart were negative to auscultation. The urine analysis revealed nothing abnormal. The blood study showed hemoglobin sixty-eight per cent, erythrocytes 3,600,000, leukocytes 9,000, and a normal differential count. No ova nor parasites were found on stool tests; a culture was not made. Dental examination revealed several infected teeth.

In the right side of the abdomen, corresponding to this part of the colon, was a tender and slightly movable mass. Proctoscopic examination was negative to the middle of the sigmoid; no ulcerations nor scars were visible.

Roentgenograms of the gastrointestinal tract showed the stomach and small bowel normal. In the right half of the colon was an irregular filling defect. The distal half was normal.

The diagnosis was a lesion of the right half of the colon probably inflammatory in type.

Operation.—Prior to operation, supportive measures, including a blood transfusion, were carried out.

On opening the abdomen, a large, irreg-

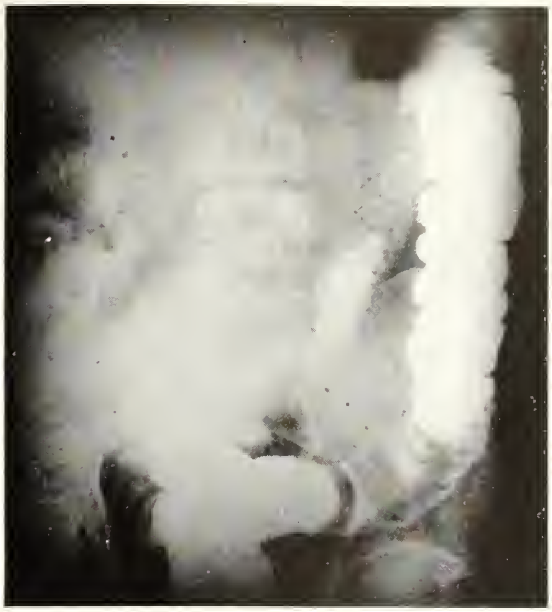

Fig. 2. Same case as shown in Fig. 1. Roentgenogram showing well-functioning ileocolostomy at splenic flexure. All the ascending and transverse colon have been removed. Film made six months postoperatively; patient entirely well and has gained forty pounds in weight; bowel movements normal.

ular tumor was found in the cecum, ascending colon, and proximal one-third of the transverse colon. There were many large glands behind the colon; one was excised and was reported by the pathologist to be inflammatory. The terminal ileum was divided nine inches proximal to the ileocecal juncture. The distal end was closed and the proximal end united to the side of the transverse colon in its distal one-third, as an end-to-side anastomosis, the Furniss clamp being used.

The patient's postoperative course was rather stormy on account of a troublesome diarrhea and abdominal distention which persisted for two and one-half weeks. He improved gradually nevertheless and at the end of three weeks the wound was reopened and the entire right half of the colon, including the terminal ileum, the appendix, cecum, hepatic flexure, and the proximal third of the transverse colon, was removed en masse. The pathologist reported the condition to be an extensive segmental enteritis which had invaded the deeper coats of the bowel, but had not perforated.

The patient's convalescence was satisfactory, and bowel function became perfectly normal within a few days after operation. He developed a mild toxic jaundice, though this was subsiding before he left the hospital.

It would have been impossible to effect a cure in this case except by partial colectomy.

LIPOMATA

It is agreed that among the benign lesions of the gastrointestinal tract, the incidence of lipomata is second only to that of polypoid tumors. They may be found in any portion of the colon, either singly or in numbers. They may also be submucous or subserous, although the majority arise within the lumen of the bowel; occasionally both types are seen in the same patient.

Structurally, lipomata are composed of fatty tissue with a connective network of fibers and blood vessels. They are covered by mucosa, which may be either smooth or ulcerated. They may have a broad base, or may be attached by a pedicle, and, as a rule, are somewhat globular in contour. Their size is also variable; some very large tumors have been reported.

Not infrequently, lipomata give rise to intussusception. In this event, the tumor generally forms the apex of the intussusceptum. Presumably, the tumor acts as a foreign body within the lumen, producing contraction of the adjacent wall with inhibition of the distal segment. Peristaltic movement induces the contracted portion to slip into the dilated portion. The author has recently observed a case of lipoma of the ascending colon with partial intussusception of the cecum and proximal segment.

Symptoms.—The symptoms of lipoma of the colon are likely to continue intermittently for a number of years. There may be only a mild, chronic, abdominal discomfort and slight indigestion, or there may be acute pain, nausea and vomiting, gaseous distention, constipation or diarrhea, and anorexia. Chronic symptoms may become acute at intervals, then suddenly or gradually subside. Their variable character may be explained by the movement of the growth with peristalsis, or, in the presence of intussusception, its spontaneous reduction.

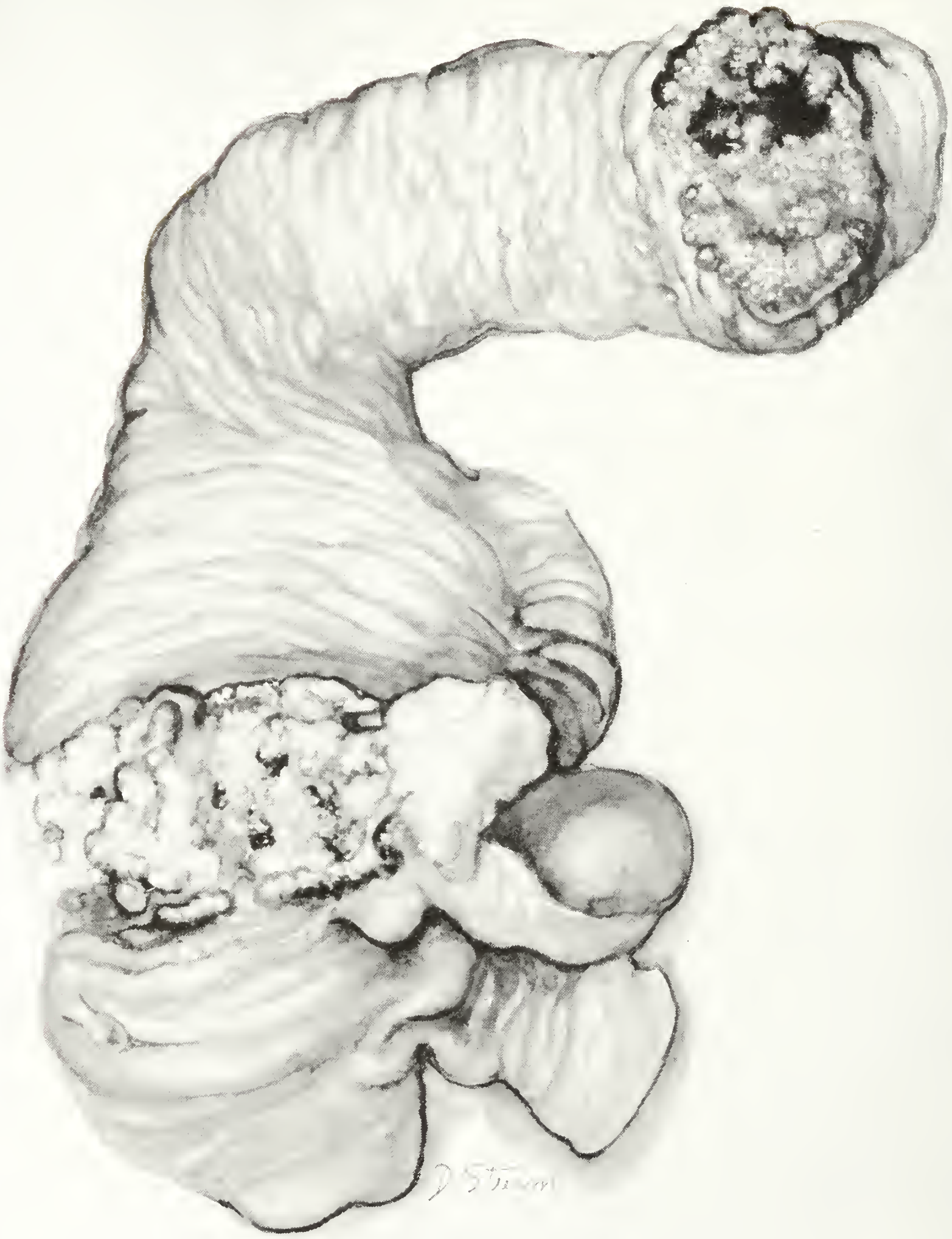

Fig. 3. Same case as shown in Figs. 1 and 2. Drawing of opened specimen, showing a large ulcerating carcinoma involving upper cecum and ascending colon, an intervening segment of normal bowel, then a second cancer of the distal third of the transverse colon.

The principal physical sign, in a large percentage of cases, is a soft, palpable abdominal mass. Loss of weight is often a notable feature. If the tumor has become ulcerated, blood, pus, or mucus may appear in the stools. Tumors and intussusceptions of the lower colon may be palpated through the rectum, seen through the proctoscope, or may prolapse through the anus. When palpable, they may be recognized by their soft consistency and, when visible, by the yellow of the fat apparent beneath the mucosa.

Diagnosis.—With the exception of those tumors which are visible or tangible in the descending colon, the diagnosis of a benign tumor presents some difficulties. Because of the similarity of symptoms and physical signs the differentiation from carcinoma is sometimes impossible. In the majority of cases, however, the roentgenologist should be able to determine not only the presence of a tumor, but whether it is benign or malignant. When no distinction can be made from the picture, the mobility and softness of the mass and the history of symptoms over a long period of time will point to its benignity.

Treatment.—At operation the bowel wall should be searched and all growths removed. Every tumor carries a threat, not only of intussusception, but of malignant degeneration. If intussusception has taken place, a tumor probably will be found within or near the involuted portion. If not bound by adhesions, the intussusception may be reduced; otherwise, the entire mass should be resected, including the tumor and the surrounding inflamed bowel areas.

If the growth is in the cecum or ascending colon, an ileocolostomy should be performed, followed by resection of the right half of the colon. A tumor in the transverse or left half of the colon, if uncomplicated, may be removed and the bowel closed. It is best to do a primary cecostomy and cleanse the bowel before removal of the growth without resection of a segment of the bowel.

Pedunculated tumors of the lower colon may be excised through the anus.

Little danger is attached to surgery for excision of colon lipomata, with or without intussusception, if the symptoms are chronic. Even in acute obstruction, prompt removal of the mass should afford an excellent prognosis.

Carcinomata

Approximately one-fourth of all the carcinomata throughout the body develop within the intestinal tract. The stomach is most often involved, the colon in a slightly smaller number of cases, and the small intestine in about two per cent. In the colon, the rectum is the site of the lesion in a large majority of cases; in the sigmoid and descending colon, the cecum and ascending

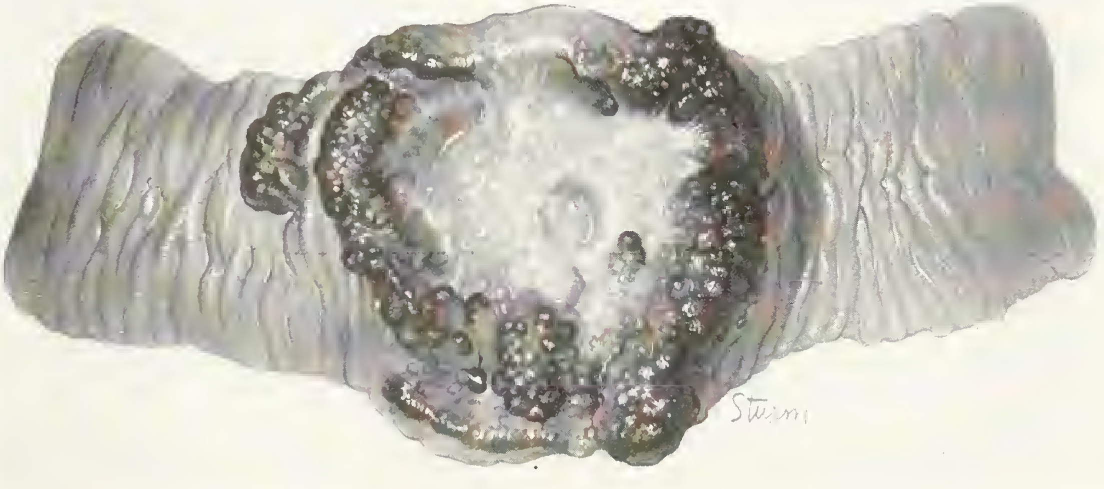

Fig. 4. Drawing of a large ulcerating and obstructing carcinoma of the middle of transverse colon. A preliminary cecostomy was done, a large segment of the colon resected, and an end-to-end anastomosis made. Recovery. This is case 1 reported under carcinoma of the colon.

colon, the transverse portion, and the splenic and hepatic flexures the incidence decreases in the order given.

Etiology.—Carcinoma of the colon has its pathogenesis in the failure of the proliferating embryonic cells of the epithelium to differentiate completely into their adult forms. The cells of the glandular or mucosal epithelium therefore retain to a varying extent their primitive state. These cells infiltrate the various coats of the bowel through the lymph vessels in both circular and longitudinal directions, thus producing different forms, or a combination of one or more forms of the growth.

Pathology.—The larger number of carcinomata extend circularly around the colon, forming the annular or "napkin-ring" type of lesion. The cells accumulate on one side of the colon and growth proceeds around its circumference, constricting the lumen and obstructing the passage of its contents. This type often has a craterlike excavation which tends to ulcerate, become necrotic, and subsequently to metastasize. The base of the tumor may consist principally of either cellular or fibrous stroma; in the latter, the mass grows slowly and is more amenable to surgical treatment. This variety frequently develops in the left half of the colon.

In another type the mass extends along the length of the bowel, acquiring a tubular or irregular shape. Since it possesses a less fibrous stroma than the annular variety, it grows rapidly and is more malignant.

The expansive, or so-called cauliflower, carcinoma develops within the lumen of the bowel, is irregular in contour, and often grows to massive proportions. This type may have either a firm, circumscribed fibrous base, as observed in the majority of polypoid tumors, or may take the soft, rapidly increasing and highly malignant form with only a slight fibrous structure, known as medullary carcinoma. Not infrequently, the latter type is covered by extensive areas of mucoid deposits.

Mucoid carcinoma is often regarded as a special, though rare, form of growth, being characterized by a hypersecretion of mucus. It spreads over a wide surface of the bowel wall, permeates the wall, and enters the peritoneal cavity. Because of this expansive tendency, complete surgical removal is exceedingly difficult.

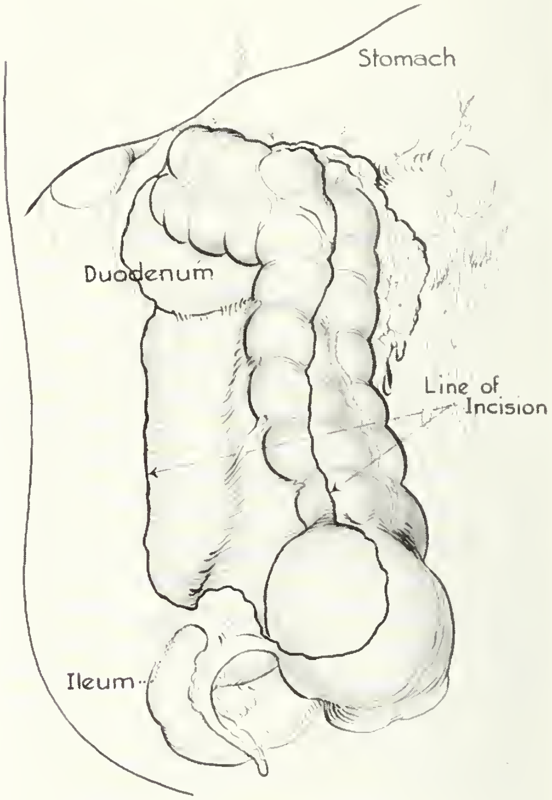

Fig. 5. Drawing showing carcinoma of cecum. Incision through lateral parietal peritoneum; mobilization of colon during second stage of partial colectomy. A preliminary first stage ileo-transverse-colostomy has been done. Same case as shown in completed operation in Fig. 6.

At some stage of their growth, early or late, depending upon the malignancy of the tumor, the cells metastasize through the lymph vessels, first to the lymph nodes and then to the other organs, or, in a few cases, to the bony structures.

Symptoms.—As a rule, the primary symptoms of carcinoma of the colon are vague and insidious in onset, and increase slowly in severity. This is particularly true when the growth is not highly malignant. Rapidly growing tumors, on the other hand, may produce severe symptoms within a relatively short time. In a few cases, the symptoms are pronounced at the onset, and perforation may even take place without any warning of the presence of a lesion.

The first signs are likely to be a slight alteration of a previously normal bowel function and a mild digestive disturbance characterized by distention, borborygmus, and eructation. A moderate anemia is a common finding. A marked secondary anemia is almost invariably present in carcinoma of the right half of the colon; in many cases, a diagnosis of pernicious anemia has been made until the true nature of the condition was proved.

As the disease advances, the digestive disturbances increase, and pain, either dull and constant or sharp and intermittent, is likely to appear. Not infrequently, the pain and distress are referred to the epigastrium. In a few cases, blood is discovered in the stools; bright blood points to a lesion of the left half of the colon, whereas occult blood indicates that the growth is in the transverse portion or right half. In many cases a tumor is palpable. These signs are more conspicuous in the late stages of the disease. Diarrhea or constipation, nausea and vomiting, loss of appetite, loss of weight, and marked cachexia and weakness are manifestations of well-advanced lesions.

Diagnosis.—The first point in the diagnosis is, of course, the history. This is of vital importance, and should be obtained in painstaking detail. Physical examination should include not only palpation of the abdomen for a local tumor and for metastatic nodules in the liver, but a bimanual palpation of the rectum for deposits on the rectal shelf. Proctoscopic examination should also be made for evidences of the growth.

The feces should be examined for mucus and pus, and for both dark and bright blood. If necessary, the investigation for blood should be repeated on several occasions; although its presence is not proof of carcinoma, with other signs of the lesion, the finding of blood lends strength to the diagnosis.

Regardless of how obscure or clear the symptoms and physical signs of carcinoma of the colon may be, a roentgenologic examination, including fluoroscopic studies, is essential. The entire intestinal tract should be visualized in every case wherein the patient gives a history of symptoms suggesting carcinoma. The barium enema is the method of choice. As the enema is given, the colon should be palpated under the fluoroscope for evidence of a mass and the appearance of a filling defect. If no tumor is demonstrated, the enema should be emptied and the colon insufflated, as advocated by Weber. Should there still be a reasonable doubt as to the presence of a tumor, the examination should be repeated.

Treatment.—The slow growth of carcinoma of the colon allows ample time for the necessary preoperative treatment. The debilitated physical reserve of the patient usually calls for measures to relieve a partial obstruction and to build up strength and resistance. Cleansing and decompression of the colon, transfusions, intravenous injections of glucose and saline, and a nourishing but nonresidue diet will go far toward improving anemia and alleviating other destructive effects of the growth, as well as toward reducing operative and postoperative risks. Only when the patient has been restored as far as possible by this preliminary therapy may the time be considered ripe for the operation. The one exception to this rule is the obviously urgent condition of acute obstruction, which requires immediate surgical decompression. A transfusion, or an infusion of acacia-glucose-saline solution, or both, should be given during operation or immediately thereafter in all bad risk cases.

The first step in the operation is an exploration for metastatic lesions in other abdominal organs and in the pelvic floor, then in the vessels and glands, and, finally, location and examination of the tumor itself. This search should be thorough, yet done with scrupulous care, the tissues being handled with the utmost gentleness. The danger of spreading infection and contamination of the parietes with malignant deposits is a potent factor in both the immediate and remote result.

Upon the findings on exploration will depend the type of operation chosen. If resection is possible, it should be undertaken

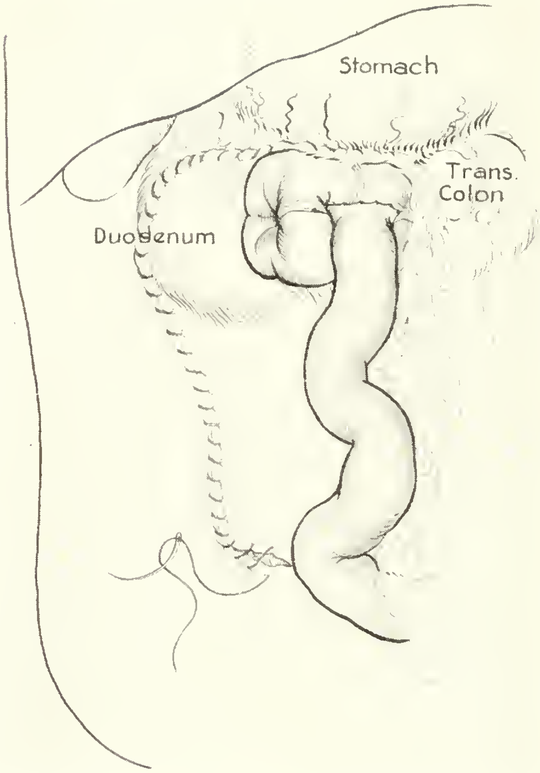

Fig. 6. Drawing showing completed operation of partial colectomy in two stages. The end-to-side ileo-transverse-colostomy with the small "cecum" is functioning well. The suture completely closes the peritoneum following extirpation of right half of colon. Prompt recovery. Patient living and well, now eight months after operation.

with due regard for preservation of the blood supply, prevention of leakage or rupture of the colon, prevention of the spread of metastasis by contamination, and a generous resection of the malignancy and gland-bearing areas. A conservative excision is likely to be poor economy. It would seem far better to remove all possible diseased tissue with some to spare, rather than lose the slightest chance for cure.

The author prefers to remove the growth in two or more stages and allow ample time between each stage for complete relief of obstruction, reestablishment of function, subsidence of infection, restoration of the blood supply, and to permit the patient to recover his depleted strength.

All growths in the right half of the colon, i. e., the cecum, ascending colon, and hepatic flexure are removed in two stages, consisting of (1) complete division of the terminal ileum and anastomosis of the proximal end to the side of the transverse colon, and (2) removal of the growth with the right half of the colon as a partial colectomy.

For resection of lesions of the transverse colon, the author first performs a cecostomy, then closes the original incision. After several days of preparation and cleansing of the colon, the median or paramedian wound is reopened, the transverse colon is resected with the growth, and an end-to-end anastomosis is made with suture, preferably using the Furniss clamp. When healing is complete, the bowel is irrigated through and through, from anus to cecum, to prove the patency of the new anastomosis. The cecum is then closed as the third step in the procedure. This operative technic may also be employed in many cases of tumor of the splenic flexure and upper portion of the descending colon.

The Mikulicz type of operation is undoubtedly the safest procedure, considering immediate mortality. One is necessarily limited, however, in the number of regional lymphatics which may be removed. The method cannot be used when the growth is very low in the sigmoid.

The following is a safe and satisfactory plan of procedure: A transverse colostomy is performed, the bowel segments are thoroughly cleansed for a few weeks, and the growth is then resected, together with an adequate portion of the colon and regional lymphatics. If the blood supply is sufficient to permit a safe end-to-end anastomosis, the operation may be completed immediately after resection; after a few days, the bowel should be irrigated through and through to establish the patency of the anastomosis. A few days later the original transverse colostomy is closed as a third stage of the resection. When the blood supply in the remaining ends of the resected colon is poor, the proximal and distal segments may be sutured in the upper and lower angles of the wound and allowed to remain several months, or until the vascular supply becomes adequate for proper and safe suture. There is no need for hurry at this stage in the treatment, since the growth with its lymphatics has been removed.

Dixon and others are now extending the indication for resection and end-to-end union of the bowel even down to the upper end of the rectum, thus conserving the anal function and obviating the necessity for an artificial anus. When the continuity of the intestinal tract can be reestablished and the continence of the anus preserved without sacrificing a thorough removal of the lesion, patients are most grateful.

Radium and X-ray Therapy.—When excision of carcinoma of the colon is contraindicated or impossible, radium and X-ray treatments are of little value. In small, accessible lesions, radon seeds may be used occasionally with benefit. Postoperative X-ray therapy has little effect other than to distribute the load of responsibility.

Below are reported two cases illustrating the treatment of carcinoma of the colon. The second case is particularly interesting in that the patient had two lesions, one in the ascending, the other in the transverse colon.

CASE REPORTS

Case 1. T. B. S., age fifty-five years, a farmer, had been well until two years prior to the onset of his present symptoms. These began with constipation, distention, and abdominal cramps; the distention was usually relieved by the passage of gas. The symptoms gradually grew worse and the pain was referred to the epigastrium. Streaks of blood had appeared in the stools about one year earlier. There was never any diarrhea or nausea and vomiting. The history of gaseous distention and borborygmus, which was relieved temporarily but returned several times a day, was typical of obstruction of the colon.

On examination, the patient's general physical condition was found to be fairly good. He had lost but little weight. The blood was essentially normal. The diagnosis of obstructing carcinoma of the transverse colon was made by palpation of a movable mass in that region and by roentgenographic demonstration of a large filling defect.

Treatment. — After proper preparation, cyclopropane anesthetic was given and the abdomen was explored through a transverse incision. A large tumor was observed in the middle of the transverse colon. There were no metastases in the liver. The abdomen was closed and a McBurney incision made, through which the appendix was removed and a cecostomy done. The colon was thereafter thoroughly cleansed by irrigation through cecostomy and through the rectum, until the patient's condition was satisfactory for the second stage of the operation. After two weeks, the transverse incision was reopened and twelve inches of the colon resected, including the growth and four inches of the normal bowel on each side. Using the Furniss clamp, an end-to-end anastomosis was made. The wound was closed without drainage, and the patient's postoperative course was uninterrupted. Ten days later, the bowel was irrigated through and through, thus proving its patency and the complete union of the new anastomosis. The cecostomy was then closed as the third stage of the procedure.

It has now been two and one-half years since this operation; the patient is quite well and is carrying on his usual duties.

Case 2. O. A. C., male, age fifty-seven years, had enjoyed good health prior to the onset of his present symptoms. One year earlier he had begun to have abdominal cramps, accompanied by soreness and gaseous distention of the colon. These sensations subsided intermittently, but returned and were more severe with each appearance. Symptoms of obstruction developed three months before his admission to the hospital; there was a considerable amount of gurgling, and the stools were streaked with blood. He had lost weight rapidly and was very anemic, indicating a lesion of the right half of the colon.

When first seen, the patient was emaciated and very weak. His blood pressure was 100 80. There was a partially fixed mass in the right abdomen and another in the middle of the transverse colon. The proctoscopic examination was negative. The roentgenologic study of the gastrointestinal tract revealed a large filling defect in the ascending colon and a second in the transverse portion. The roentgenologist's diagnosis was multiple lesions of the colon, probably carcinoma of both ascending and transverse segments.

Treatment.—A blood transfusion was given and the patient was otherwise prepared for the operation over a period of several days. Under cyclopropane anesthesia, the abdomen was then explored. No metastases could be detected in the liver. A large carcinoma was found in the ascending colon, and a second, smaller growth in the middle of the transverse colon; between the two was an intervening section of fairly normal bowel.

The terminal ileum was divided six inches proximal to the ileocecal juncture. The distal end was closed and the proximal end united to the side of the transverse colon at its junction with the splenic flexure, as an end-to-side anastomosis, the Furniss clamp being used. The postoperative course was satisfactory. Sixteen days later, the wound was reopened and the entire right half of the colon, with the hepatic flexure and distal two-thirds of the transverse portion, was resected en masse. The wound was closed without drainage.

The patient's postoperative course was uneventful and he was dismissed from the hospital four weeks following the last operation. He has been seen several times since, has regained his normal weight, and is going about his regular work, now two years after operation.

Under present conditions, the operability of carcinoma of the colon is far too low, as the majority of patients are seen only after the disease is well advanced. If the growth is in the distal colon and the bowel can be defunctioned, cleansed, and the bacterial content reduced, many surgical derelicts can be salvaged and the operability increased.

The operative mortality has always been too high, but men who are trained in this field of surgery are reducing it yearly by the use of the stage operation and meticulous care in preparation of patients for operation. With improved technic and adequate postoperative management, the immediate mortality should not be over five per cent, which would be comparable with that of other major surgical procedures.

Assuming that the best of treatment is given, carcinoma of the colon offers a better outlook, on the whole, than cancer in any other location in the body. It is a lamentable fact that we have learned how to treat cancer of this organ so successfully as to cure a very high percentage of patients, yet, for reasons beyond our control, are unable to bring this treatment to more than a small number of those so afflicted.

DISCUSSION

DR. W. D. HAGGARD (Nashville): Mr. President and Gentlemen: I will confine my few remarks to carcinoma of the colon, a portion of the subject that Dr. Sanders has handled so excellently.

(Slide). Symptoms of carcinoma of the right side of the colon. We have usually a soft, flat, fungating adenocarcinoma that is associated with mild indigestion, often diagnosed chronic appendicitis; local tenderness simulating subacute appendicitis. This type of carcinoma is prone to perforate with a localized abscess. There is intermittent diarrhea and constipation. There are mild intestinal symptoms with weakness, but the most characteristic symptom is the very low hemoglobin, the anemia which is secondary. Whenever you find a hemoglobin as low as thirty or forty per cent you make a guess of carcinoma of the head of the colon and by X-ray exclude it.

The most satisfactory feature, besides that, from a diagnostic standpoint is the tumor. If any person is fortunate enough to detect the tumor himself or if you can detect a tumor in the early stages, it is usually a very favorable type for operation.

The characteristics of the transverse colon differ somewhat because there we get to the obstructive type, which is either complete or partial. In fact, when we get over to the splenic or far end of the transverse colon, obstruction occurs in nearly 100 per cent; in other words, we do not see that patient until he has obstruction. It is up under the left costal cartilage; we cannot feel it; we cannot see it; he does not have many symptoms except what he thinks is constipation; and it is finally obstructive.

You may find the tumor of the transverse colon in any one of the four quadrants of the abdomen. It is very prone to form a fistula into the stomach, just like a gastrojejunal ulcer is prone to perforate into the cecum. These patients have constipation and colic, and they may have blood. On account of the fact that this area is associated with the semiliquid contents of the small intestine that are rapidly passed on by the cecum, it gives the highest mortality because of the infectivity. We must make a very wide incision of the glands that are adjacent.

Lastly, the surgeon must be very particular about the anomalies of the blood supply and particularly careful to avoid the midcolic artery.

In the left colon we have a very different picture. The obstruction is the predominant symptom. We have mild colics with gas and maybe constipation. There is complete occlusion, sometimes by foreign bodies, and of course by cicatrization. This is the site of the so-called napkin-ring carcinoma.

The patient can often tell you of a sensation of stoppage and localization, and he is not at all inaccurate about just the location of the tumor at times.

The palpation may cause gurgling, which you can readily anticipate.

These are the cases that have the melena in or on the stool, and that, of course, occurs from ulceration.

The prognosis is less good here on account of obstruction, perforation, and metastasis.

In all lesions of the colon, no matter where situated, it is essential to have the history of the case very carefully worked out, as well as the X-ray findings.

As the cases of cancer of the colon come to the surgeon, practically one-third of them are already obstructive. There you have two terrible lesions, one a malignancy and another obstruction. You know that by and large as we see obstructions we can save only about fifty per cent by operation. That is absolutely the case in malignant obstructions—fifty per cent mortality. One thing that leads to the mortality is our zeal to establish the location of the growth, maybe at the sigmoid. A cecostomy on the right side of the abdomen is made in the caput, simply brought up, and a three-quarters of an inch rubber tube sewed in. What I would like to stress is for us to withhold our inquiry and zeal and not examine the tumor to locate it. It is the wrong time to do that. The patient had months before and he will have weeks afterwards to locate the growth, but if you take hold of that growth that is already waterlogged with germs, and manipulate it, you are just literally squeezing germs out of it as you would water out of a sponge, and these people die of peritonitis. If you leave the growth alone and simply do a quick cecostomy under local anesthesia, you will save a considerable portion, and then do your fine work, diagnostic and later surgical, at your leisure and the patient's safety.

In inoperable carcinoma of the right half of the colon, I think it is important, when the X-ray is so very definite, not to subject the man to the pain, expense, and absence from home for an exploratory operation which will profit him nothing.

A carcinoma in the midhalf of the right colon can be cured in a very considerable number of cases by a two-stage excision of the colon.

The absence of lymphatics allows the cecum to "hold" cancer there longer than any other part of the body before metastases occur.

DR. R. L. SANDERS (closing): I wish to thank Dr. Haggard for his most illuminating discussion. He always gives us something worth while, and today he has emphasized many of the points that I made in the paper, particularly that of anemia associated with lesions of the right half of the colon. Many times the anemia is so great that one is prone to draw a conclusion of pernicious anemia when the patient is first seen. Such a pallor is almost characteristic of carcinoma of the right half of the colon. He has also emphasized the fact that obstruction is one of the early symptoms of lesions of the left half of the colon. This can easily be understood when we realize that the napkin-ring type of growth occurs in that anatomical location, and that the fecal contents is usually more solid, therefore, obstruction would be the outstanding feature.

This little diagram which I have taken from Lockhart Mummery's recent article in the S. G. and O. emphasizes the very important points, namely, the prognosis is in direct proportion to the extent of the lesion. You will observe that in the first picture the lesion is limited to the mucosa, and that the prognosis is reasonably good. In the second picture, the growth has extended deeper into the structures, but has not yet metastasized to the region of the lymphatics. The prognosis is less favorable. In the third picture the growth has not only extended deep into the structures, but has metastasized to neighboring lymphatics, and therefore, the ultimate prognosis is extremely bad. This further serves our purpose in emphasizing the fact that the earlier the growth is diagnosed and removed, the better the prognosis.

Finally, let me sum up by saying that it is a lamentable fact that we have now learned how to handle rather safely this terrible disease of carcinoma, and yet because of factors beyond our control, we are unable to apply these remedies at the proper time. If the cases can be seen early and the operability extended, I am quite sure that carcinoma of the colon would lend itself reasonably favorable for a five-year cure, or even longer.

HYPOTHYROIDISM*

O. N. Bryan, M.D., F.A.C.P., Nashville

THE TERM hypothyroidism is used for the purpose of stimulating more interest in the diagnosis and treatment of these cases. The term myxedema is synonymous with hypothyroidism. I feel that ordinarily the term myxedema implies the extreme of hypothyroidism, and my plea is for earlier recognition of these cases. You will find these cases have usually been through the hands of many physicians before the true nature of the disease is recognized. It is a disease for which we have a specific medicine, and to overlook a correct diagnosis is a grave injustice to the patient. It is rather simple to treat, by giving the dessicated thyroid gland, but needs the close supervision of the physician until the maintenance dose is established. A decrease or absence of the thyroid secretion will cause myxedema and all its manifestations; therefore, we must look on the case as one of hypometabolism. A balanced condition of the thyroid secretions must be maintained, and in case it is not maintained, we will have clinical manifestations depending on whether it is hyperthyroidism or hypothyroidism. The clinical manifestations will vary according to the degree of deficiency of the thyroid secretion. No doubt most of us are daily overlooking cases in which a deficiency of thyroid secretion is playing a part. Most of us would very readily diagnose a case of cretinism or extreme myxedema. By paying closer attention to the causes of obesity, facial expression, thickness and texture of the skin, brittleness of nails, fatigue, gain in weight, falling of hair, etc., and by having more basal rates done, in suspected cases, we would recognize more of these cases and put them on treatment. By so doing we would give comfort to many cases that are not relieved by other measures.

Hartsock makes a simple classification of hypothyroidism cases as follows:

1. Myxedema—severe hypothyroidism of adults.

2. Cretinism—severe hypothyroidism of children.

3. Post-operative or post-radiation hypothyroidism, and hypothyroidism due to the exhaustion of the thyroids by untreated hyperthyroidism. Patients in whom this latter condition occurs may show symptoms of both hypothyroidism and hyperthyroidism, so that the condition is frequently called "dysthyroidism."

4. Incipient hypothyroidisms—mild and atypical cases of any age.

The cause of hypothyroidism has long been known to be due to a hypofunction of the thyroid gland which usually arises spontaneously. Thyroidectomy and radiation of the thyroid are two common causes of hypothyroidism. If we remember that the surgeon has no actual gauge to go by in doing thyroidectomy, then it is no wonder this occurs. Crile's book makes mention of the fact that if cases, in which thyroidectomy has been performed or radiation used, are studied ten to fifteen years later, a moderate to severe grade of hypothyroidism will be found in a large percentage. Sturgis is convinced that hypothyroidism is more common in the goitrous regions. Gull originally described this condition as one of women, but it is common to both sexes, more in the female. Acute thyroiditis is often followed by hypothyroidism. Severe acute and chronic infections, emotional strains, and senile deterioration are factors that may play a part in causing hypothyroidism. There are three periods in a woman's life in which hypothyroidism is more apt to occur; namely, puberty, pregnancy, and menopause. I have been impressed in recent years by the number of cases that occur at or near the menopause. On close questioning we find most of the changes began with the menopause. Cretinism may be the result of congenital athyroidism, or an hereditary tendency of thyroid disorders, or of a marked iodine deficiency in the mother during pregnancy. It is not uncommon in goiter belts to see thyroid families, with a mixture of thyroid disturbances, such as hyperthyroidism, hypothyroidism, colloid goiters, and tumor formation, in different members of the family. Arteriosclerosis and senile changes are factors mentioned in causing a hypofunction of the thyroid, because of the lessening of the blood supply to the gland.

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*Read before the Tennessee State Medical Association, Nashville, April 12, 13, 14, 1938.

Lowering of the basal rate or hypofunction of practically all the cells of the body is the outstanding feature in this condition. Sturgis states that "the difficulty in recognizing the condition is due to two main reasons; first, because the possibility of the disease is not kept in the mind of the physician; and, second, because it is almost impossible to obtain an authentic history on account of the patient's dulled mentality." Hartsock says that "the only satisfactory method for detecting this disease is to suspect it, as one suspects focal infection, as a possible explanation of vague disturbances, especially when these are related to the neurasthenic or exhaustive syndrome. Such symptoms as fatigue, depression, mental sluggishness and retardation, indigestion, constipation, menstrual and sexual disturbances, and many others can be so easily, and apparently satisfactorily, explained on a nervous or other pathologic basis that we fail to look for a still more fundamental cause of the subnormal function."

Symptomatology.—It is well always to hold in mind that we are dealing with cases in which there is a reduction, or absence, of the one hormone, which will account for the marked similarity of the symptomatology of cases of myxedema. The symptoms and signs develop over a period of months or years. Their gradual development may be one reason for failure of recognition earlier.

A table of symptoms and signs of myxedema as published in Annals of Internal Medicine, August, 1937, by A. Ravin is as follows:

General—

1. Fatigue
2. Weakness
3. Inability to stand cold
4. Weight increase
5. Fat increase
   (a) General
   (b) Supraclavicular

Skin—

1. Paleness
2. Dryness and scaliness
3. Absence of sweating
4. Hair—scanty, coarse
5. Nails brittle

Circulatory—

1. Shortness of breath
2. Slow pulse
3. Small pulse pressure
4. Poor quality of heart sounds
5. Dilation of heart
6. Electrocardiographic changes — low voltage, especially in T waves in leads I and II

Edema—

1. Eyelids
2. Face—Cheeks
3. Ankles—
   Non-pitting
   Pitting

Mental and Neurological—

1. Drowsiness
2. Slow speech
3. Numbness and tingling
4. Impairment of memory
5. Impairment of hearing
6. Prolongation of tendon reflexes

Gastrointestinal—

1. Constipation
2. Poor appetite
3. Indigestion

Blood—

1. Increased cholesterol
2. Moderate anemia

Lowered Basal Metabolic Rate—

The making of a basal metabolic rate, under basal conditions as near as possible, is essential, but not always diagnostic of hypothyroidism. Errors of ten to twenty per cent on the plus side are often found because of the excitement of the procedure. This may often cause the physician to be misled by finding a minus ten or minus fifteen, and interpret it as within normal limits. As a matter of fact, if a true basal rate could be had on this same case, it might read minus twenty or twenty-five per cent. In cases of this kind it is well to rely more on the clinical findings and repeat the test until satisfied. If the test is still unsatisfactory and there are enough clinical findings, then it is best to try thyroid extract, in moderate dosage, and watch the clinical features for a few weeks, to see if there is improvement. At the end of this time repeat the basal rate to see if it has swung to the positive side. Examination of the thyroid gland will as a general rule reveal nothing abnormal, but occasionally an adenoma may be present, or a thyroidectomy scar, which would throw light on the case.

The difference between incipient hypothyroidism and myxedema is only a matter of degrees; incipient being the earlier case without the symptoms being pronounced; while, on the other hand, myxedema is the other extreme with practically all symptoms and signs present. To reach the stage of myxedema means the deficiency in the hormone has been more pronounced and usually over a longer period of time.

If we think of this as a case of hypometabolism, then we realize that there is scarcely an organ or tissue in the body that will not have some of their functions disturbed. If in doubt after a thorough physical examination and basal rate, then there will be no harm done by trying thyroid therapy under close observation.

It is not my purpose to give you detailed descriptions of all symptoms and signs, but think the pronounced features should be set before you. Often we are confronted with the complaints of weakness, fatigue, inability to stand cold, and still at the completion of the examination we cannot satisfactorily explain them. Hypothyroidism should be thought of. They usually give a history of weight increase and fat increase. The fat may be generally distributed and is especially complained of in the supraclavicular spaces, hands, and ankles. Especial attention should be given to the skin. It is one of the first places to find characteristic changes. The pallor is most striking and will be much more impressive when you get a blood examination, which only shows a moderate degree of secondary anemia; not at all in keeping with the appearance of the patient. The skin is unusually dry, thick, harsh and cool to the touch, as well as scaly. It is good practice to feel of the skin and try to pinch it up. In the hypothyroid case it will be found to be very thick, dry, cool and hard to pinch. The thickening or swollen condition of the skin about the face and eyes is one of the first symptoms to bring these patients for examination. The appearance of the extreme case is very sallow, not unlike that seen in nephritis. These patients are very sensitive to cold. The ears, hands, and face all appear larger than normal and the fingers are clumsy. These patients do not sweat much. The hair is coarse and scant. The scantiness of hair is especially noted in the axillæ and pubic region. The loss of hair from the eyelids and eyebrows adds materially to change the appearance of the individual. In cases of alopecia always think of hypothyroidism. The nails are very brittle and often have transverse ridges. The mucous membranes of the cheeks, palate, and pharynx may be swollen and make talking or swallowing difficult.

There are certain circulatory symptoms in most of the cases of myxedema, such as dyspnoea, slow pulse, small pulse pressure, poor quality of the heart sounds. There may be some dilatation of the heart and certain electrocardiographic changes. Quite a lot has been said in recent years about the "myxedema heart." It is characterized by being enlarged and has sluggish cardiac movements. Lerman, Clark, and Means believe that "the heart is generally enlarged in myxedema." Digitalis will have very little effect on this type of cardiac enlargement, however, it will diminish under thyroid extract therapy as has been shown by X-ray pictures before and after thyroid therapy. The incidence of hypertension in myxedema is high and under treatment the blood pressure may become lower or normal. The myxedema heart will return to normal size upon administration of adequate amount of thyroid extract. Upon withdrawal of thyroid extract the heart again dilates and takes on characteristic electrocardiogram changes.

There is usually a generalized edema, but is more noticeable in the face, cheeks, eyelids, and ankles and is usually non-pitting. Characteristic mental and neurological symptoms are present in the form of drowsiness, slow and deliberate speech. There is an impairment of memory and lack of interest in all things. To make decisions is an effort. Lethargy is a frequent complaint and often headache is present. Conklin states, "Mental derangements due to lack of thyroid may simulate a psychosis, a mania, or dementia precox." The special senses of taste, hearing, and smell may be altered by hypothyroidism. Joint and muscle pains and difficulty of locomotion are occasionally complained of. Prolongation of tendon reflexes are present.

The gastrointestinal symptoms, such as indigestion, a poor appetite, and constipation, are present, but of no particular value in arriving at a diagnosis because they are so often found in other conditions.

Increased Cholesterol.—In recent years much has been written about the relation of blood cholesterol and dysfunction of the thyroid. It is diminished in hyperthyroidism and is increased in hypothyroidism. Ravin suggests that the three criteria for diagnosis of myxedema are: (1) the presence of the characteristic symptoms and physical signs, (2) a lowered basal metabolic rate, and (3) an elevated blood cholesterol, and he suggests that we might add a fourth to these which is a return of the above three to normal under thyroid therapy.

Chaney has described a prolonged tendon reflex as occurring in myxedema. The muscle contracts usually as rapidly as normal, but remains contracted as long as a second and relaxes slowly. It will return to normal as the basal rate returns to normal.

There is a degree of secondary anemia in most of these cases, but it is not as severe as would be indicated by the appearance of the individual. It will improve some under thyroid therapy, but will probably need iron to restore the hemaglobin to normal.

Krants analyzed forty-five consecutive cases at the Massachusetts General Hospital for certain symptoms and their percentage as follows:

Oedema	*Per Cent*
Eyelids	95.4
Face	95.2
Hands	72.5
Ankles, non-pitting	80.0
Ankles, pitting	43.9
Facies myxedematous	85.4
Fat Increase	
General	88.1
Abdominal wall	73.7
Thighs	20.6
Supraclavicular	51.3
Weight increase	94.9
Gastrointestinal	
Constipation	92.7
Indigestion	75.0
Nausea and vomiting	39.5
Joints	
Elbows	18.9
Knees	56.4
Other	34.2
Mental	
Drowsiness	92.5
Memory impairment for past events	12.8
Memory impairment for present events	81.6
Emotional states	73.7
Psychoses	21.6
Neurological	
Numbness and tingling	82.5
Slow speech	87.5
Thick tongue	85.0
Sense Organs Impairment	
Eyesight	43.2
Hearing	40.5
Skin	
Paleness	100.0
Cyanosis	33.3
Dryness	100.0
Scaling	77.7
Hair	
Loss from head	82.9
Coarseness	71.8
Loss from outer one-third of eyebrow	63.9
Loss in axillæ	73.0
Loss of pubic hair	51.3
Nails—brittleness	70.0
General Symptoms	
Appetite	43.8
Sensation of cold	97.6
Frequent upper respiratory symptoms	32.4
Dizziness	66.6
Dyspnoea	90.0
Fatigue	100.0
Headaches	70.0
Absence of sweating	97.4
Weakness	100.0

There is an increase in the alimentary glucose tolerance. Large amounts of glucose can be given without producing glycosuria. Menstrual disturbances in the form of amenorrhoea, menorrhagia, and metorrhagia are often associated with hypothyroidism. By analyzing the above group of symptoms one can readily see that there are many conditions hypothyroidism must be differentiated from. First, it is well to remember that there is such a condition as hypothyroidism, and the diagnosis can often be made without the basal metabolic rate, however, the basal rate will be of great assistance in recognizing the milder cases of hypothyroidism.

Cretinism is the same condition as described above, but is in children. It is characterized by marked retardation of both mental and physical growth, due to thyroid deficiency. The child is often born with this condition, but it is not recognized until some of the normal functions fail to develop at the time they should, such as, teething, walking, and talking. Even then the condition is not recognized because the characteristic appearance usually does not develop clearly until about the second year. Hartsock says, "The skin is rough and dry. The hair is coarse, often giving the appearance of tow. The features are bloated. The tongue is thick and protrudes, giving a beastlike expression in very severe cases. The teeth appear very slowly and are prone to decay. The bridge of the nose is low and in typical cases the entire picture is unmistakable. In milder cases cretinism must be differentiated from rickets, birth injury, mongolianism, dwarfism, and achondroplasia."

Hypothyroidism is a possibility in any case that has had thyroidectomy or radiation of the thyroid. It is especially to be looked for in the large colloid goiters that already have a deficient secretion. In from three to five years from the time of thyroidectomy or radiation of the thyroid a fair per cent will be found to have hypothyroidism. The most severe effects of this type of hypothyroidism are usually noted in those systems which were affected by hyperthyroidism, that is, the nervous, ocular, cardiovascular, and gastrointestinal systems. Incipient hypothyroidism is more difficult to diagnose, because of the mildness of the symptoms. Too often we are satisfied with a symptomatic diagnosis, such as anemia, constipation, amenorrhoea, and dysmenorrhoea, when the true causative factor is hypothyroidism. At puberty a lack of endurance, anemia, nervous disorders, dysmenorrhoea, and digestive disturbances may be explained as mild cases of hypothyroidism. Sterility is another condition that may be influenced by hypothyroidism, both in the male and female. The ordinary effects of hypometabolism, such as asthenia, obesity, subnormal temperature, a susceptibility to cold, dry skin, brittle nails, and tendency to drowsiness, are frequently seen. One or many of these features are usually present in every case of hypothyroidism.

TREATMENT

The specific treatment for hypothyroidism or myxedema is summed up in the two words, thyroid extract. Any reliable brand of thyroid extract or the active principle thyroxin may be used. Some think thyroxin is superior to thyroid extract, because its strength is known, and it is many times more powerful and the quantitative relationship between the amount of thyroxin administered and the basal metabolic rate permits the daily dosage to be accurately measured. Means and Richardson disagree with these statements and state that thyroxin is not superior to the dried gland in treatment of this disease. To get the desired effects from thyroxin, it must be given intravenously. It is capable of giving severe reactions, even when given in ten milligram doses; these reactions manifesting themselves in the form of fever, severe cramp-like pains, tenderness of all the muscles of the body, nausea, and not infrequently vomiting. There may be marked tachycardia. The nausea and cramps may last three or four days, while the severe muscular cramps may last for several weeks. If uncertain as to the progress of the case or the accuracy of the drug used, then we have the basal rate to guide us. It is unwise to depend too much on slight variations of the basal rate. The best guide we have as to the progress of the case is to watch carefully for alterations in the symptoms, and let this be our guide for alteration of dosage. We should be satisfied with the lowest dosage that will cause a disappearance of the symptoms. It is not wise to push the dosage beyond this limit. It is our purpose to establish a maintenance dose. After the maintenance dose is established, it will not be necessary for the physician to see the patient often. It does not require much thyroid extract to render these cases symptom free, but if, on the other hand, the drug is pushed to more than the tolerance, these cases are made thyrotoxic more easily than the normal case. Christian states that "there is no hurry, in a disease as chronic as myxedema, except in the very terminal stage, and to run the risk of a severe immediate reaction and perhaps later the production of untoward cardiac symptoms by the intravenous administration of thyroxin cannot be discouraged too much." It is best to begin treatment by giving one and one-half to two grains of dessicated thyroid extract per day. Observation of the patient should be made once each week. Close attention should be given to a recheck of the symptoms and signs given above and, as we approach the maintenance dose, there will be marked changes in the symptoms. It is a matter of increasing the dose gradually until the maintenance dose is found. When the maintenance dose is found, then it will have to be continued throughout the life of the patient.

Marine claims the physiologic action of thyroid substance is directly proportional to its iodine content. The United States Pharmacopoeia requires not less than 0.17 per cent nor more than 0.23 per cent by weight of iodine. The circulatory system should be watched closely for palpitation, precordial distress, tachycardia, and an elevation of the blood pressure. In case marked tremor, palpitation, and great loss of weight, with symptoms of hyperthyroidism, develop, the dosage should be reduced. At any time we are in doubt about the status of the case, we can resort to a basal metabolic rate. Symptoms will recur rather rapidly unless the maintenance dose is kept up. Other conditions such as diabetes mellitus and pernicious anemia will need other therapy for that condition. The anemia associated with hypothyroidism will often respond quicker if iron and ammonium citrate is given, fifteen to thirty grains three times daily. More thyroid extract will be needed in cold weather than in hot weather. It is stated that cases living near the seashore will require less thyroid extract. It is best to give the larger doses of thyroid in the early morning and noon and small doses in the evening, because the stimulating effect may cause a degree of palpitation and contribute to insomnia. And, furthermore, the subnormal symptoms are all more pronounced in the early morning. The therapeutic test is unscientific, but will be helpful at times. Especially will this be true in cases where the basal rate is only slightly deviated from normal and still there are other symptoms and signs that might be found with hypothyroidism. Remember in giving thyroid therapy either in the mild or severe case to keep them under close observation until the maintenance dose is established.

DISCUSSION

DR. R. G. WATERHOUSE (Knoxville): Dr. Bryan has given us a very excellent resume of this subject, and I do not know that there is anything that I can add to it. Perhaps I can say a few things that may emphasize what he has said, and I would like to show a few slides.

The thyroid gland does not initiate either hyperthyroidism or hypothyroidism. The condition is thrust upon the gland, but in hypothyroidism, just as in hyperthyroidism, the thyroid gland is the link in the chain that we can attack. In hyperthyroidism of course that attack is made surgically.

We know that the complete removal of the thyroid gland will give us a lowered metabolic rate, down to a minus forty or fifty, and following that we will have the symptoms of myxedema which Dr. Bryan has just outlined to us.

There are other conditions, however, that will give us a lowered metabolic rate, and some of the patients that fail to improve on the specific thyroid medication and have been diagnosed on a low metabolic rate as hypothyroids are really not hypothyroids and therefore do not improve on this medication.

It is known that when patients are fasting the metabolic rate becomes lowered as a compensatory measure. Patients who become stabilized on a diet of 3,000 calories can also be kept stable on a diet as low as 1,900 calories. That is because on this diet the metabolic rate is lowered and that enables them to maintain their weight at that rate.

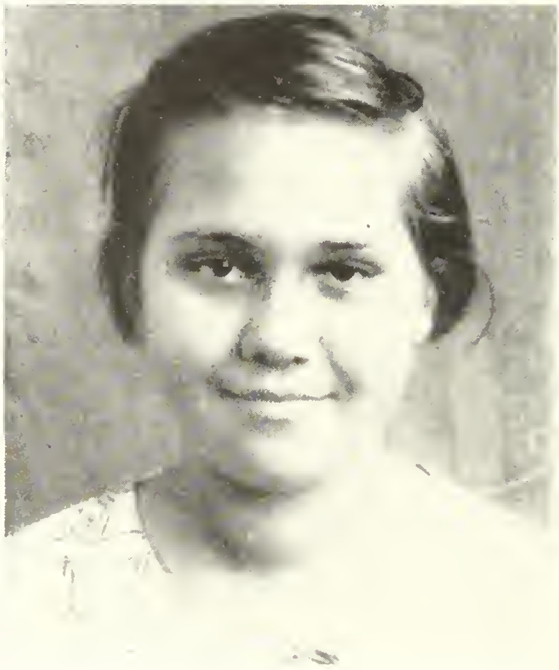
In some cases of menstrual disturbance, particularly at the menopause, with low metabolic rate, you will find that the patients have been on an insufficient diet and therefore as a natural consequence of this have lowered their metabolic rate, and what they need is a new diet rather than thyroid medication.

Children with a low metabolic rate but normal bone development, normal blood cholesterol, and normal dentition are not benefited by the hypothyroid medication, that is by the administration of the thyroid extract, the reason for that of course being that the cause is not hypofunction of the thyroid gland.

In castrates we see a lowered metabolic rate; in Addison's disease we see a lowered metabolic rate; in certain pituitary tumors we see a lowered metabolic rate, and in atrophic arthritis and a number of other conditions we see a low metabolic rate which is not associated with a hypothyroidism and therefore not benefited by thyroxin or thyroid extract.

Dr. Bryan very wisely, I think, omitted saying much about goiter. We are too prone to think that in order to have a hypothyroidism or a hyperthyroidism we must have some enlargement of the thyroid gland. This is not at all necessary, although whenever the iodine content of the thyroid gland falls below one-tenth of one per cent, enlargements of the thyroid gland will begin. It is not necessary either for hyperthyroidism or hypothyroidism that we have goiter. Nevertheless certain changes, hyperplasia being the first, hypertrophy, piling up of the epithelium, and enlargement of the gland, do begin whenever these conditions which can precipitate hyperthyroidism or hypothyroidism occur, and in that way hypothyroidism and hyperthyroidism are imposed on the thyroid gland.

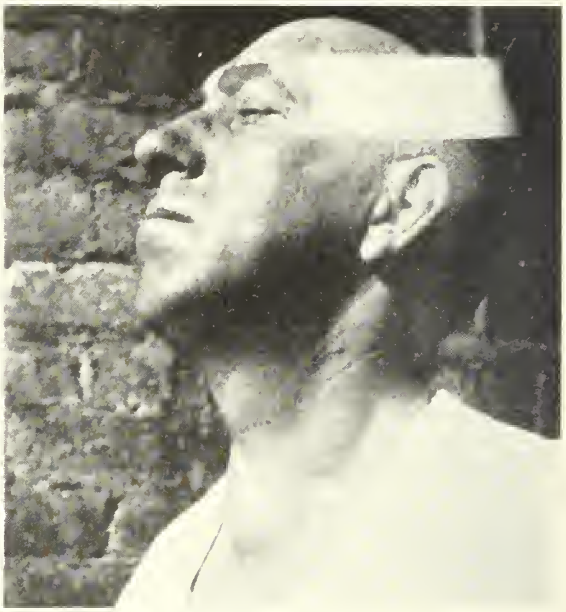
Perhaps the slides will illustrate some of the things that we have been taking about.



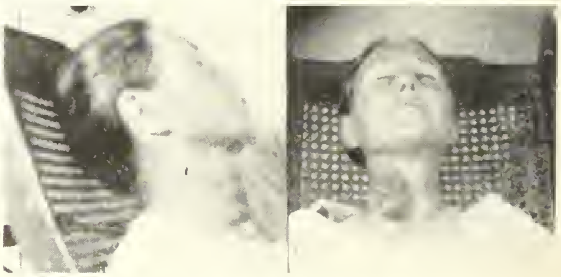
Slide I is of a girl about twelve years of age. She has a hypothyroidism. She has the typical adolescent type of goiter. In the treatment of your hypothyroids, this type does not need thyroxin or thyroid extract. This girl needs iodine. I usually give them doses of Lugol's solution until I begin to see some change, usually a firmness in the gland from the iodine; then on ten milligrams of iodine a week that patient will carry on and the thyroid will return to normal, her basal metabolic rate will return to normal, she will lose some of the extra flesh that you see she has. Rather large for her age would be a better way to express it than obese.

Slide II is of a patient who shows no enlargement of the thyroid gland to palpation or external observation. That could be very well a hypothyroid. As a matter of fact she was a hyperthyroid.

Slide III is that of an elderly man, a preacher, who had been treated for fibrillating heart, considered a cardiac case and told that he had to give up his work. He is a very definite hyperthyroid, and you see no enlargement of his gland.

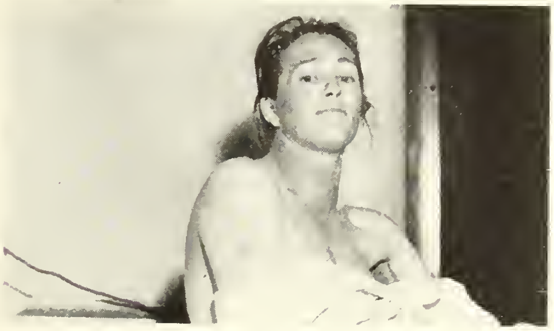


Slide IV. In this case you see an enlargement which is a fetal adenoma, a true tumor of the thyroid gland. That may be present with hyperthyroidism, it may be present with a normal thyroid function, or it may be present with hypothyroidism. I show it because I think we should always keep in mind this type of tumor. This is the type of tumor that gives rise to ninety per cent of the malignancies of the thyroid gland, and if removed at the stage that you see it, in this picture, the operation is simple and will relieve that man from the danger of cancer of the thyroid.

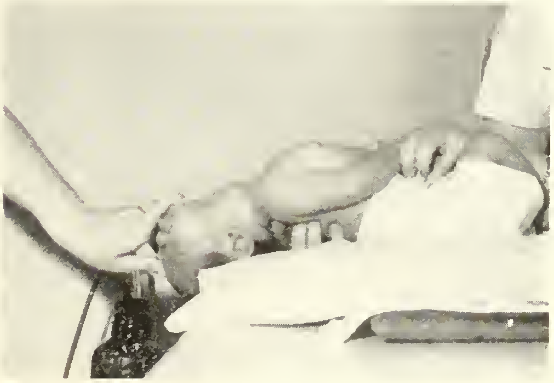


Slide V is a picture of a woman who had exactly the same type of lesion that the man previously shown had. Hers, as you can readily see, has already undergone malignant degeneration with involvement of the skin.

Slide VI (not sent for magazine) is of a patient with colloid goiter. That patient may have a normal thyroid function, a supernormal, or a hypofunction. In her case I think you can see that she has some exophthalmos. That patient had a hyperthyroidism.



Slide VII. This patient is a hypothyroid. She gives a history of her goiter beginning some six years previously. She, however, has a child ten years old that has a goiter. That illustrates what Dr. Bryan brought out about the occurrence of these different thyroid conditions in the same family.



Slide VIII is a picture of the baby of the woman in Slide No. VII. The baby is four days old. You can all see the goiter there. If that woman had had iodine the baby would not have developed a goiter. That baby now will probably improve on iodine treatment itself at a later stage.

DR. N. S. SHOFNER (Nashville): Mr. President and Gentlemen: I had the opportunity of reading Dr. Bryan's paper before it was presented, and with the additions to his paper that Dr. Waterhouse has made I find very little that I can add. I would like to emphasize one or two points which were brought up in this discussion. The first of them is the post-operative hypothyroidism. In a certain percentage of cases there will develop a degree of hypothyroidism post-operatively. This I think is an advantageous circumstance. I am always pleased when a patient of mine who has been operated upon for toxic goiter shows a moderate degree of hypothyroidism. I believe that that insures the patient against recurrence of the toxic goiter. Of course that may proceed to a point that will be disturbing and may necessitate the administration of desiccated thyroid, but in the vast majority of cases I believe that a slight lowering of the metabolism, say to minus twelve or fourteen, is a very definite advantage and that we would be making a mistake to administer any form of thyroid therapy to that individual.

I have been impressed in seeing a few cases of hypothyroidism that one of the most constant complaints they have is muscular stiffness and soreness, and this I think is especially true about the shoulder joints, the muscles of the shoulders rather than the joints, though of course the arthritic changes do occur, but in my experience it seems to me that the muscles are more markedly sore than the joints themselves, and that frequently will direct attention to the possibility of lowered thyroid function.

In the treatment of the condition of hypothyroidism I think that two points should be emphasized: first, that it is always possible to bring about a hyperthyroidism by persisting too long in the administration of thyroid extract or by giving too large doses, and, second, I think it is a great mistake to give the patient a prescription for thyroid extract and not see him or her frequently afterwards.

I recently operated upon a young woman who was seen by a medical man who made a diagnosis of hypothyroidism and confirmed it with a metabolism rate and gave a prescription for desiccated thyroid, giving her the advice, however, that she should report to him at frequent intervals. The patient left this state, went to Florida to live, and was there for several years, and during that time had continued taking the desiccated thyroid without any interval of rest. She came back to Nashville, was examined by the same internist, and a very definite toxic goiter was found which necessitated operation. That sort of thing can occur, and unless the patient is willing to cooperate and the doctor can observe her frequently, I believe that it is better to leave the condition untreated, because I am quite sure that a hyperthyroidism is a worse condition than a hypothyroidism.

One other point in regard to the treatment, which is that it is better for each individual doctor to use one brand of thyroid extract, because there is a variation in the potency of this drug and those prepared by different drug houses will vary. Unless one is certain of the potency of the particular drug he is using, he will not be able to gauge the effects of his therapy.

DR. O. N. BRYAN (closing): I appreciate very much the remarks made by Dr. Waterhouse and Dr. Shofner, especially that you should select one particular brand and use that, which is very well taken.

ACUTE ABDOMEN IN INFANCY AND CHILDHOOD*

W. T. Mathes, M.D., Greeneville

CERTAIN FACTORS differentiate lesions occurring during the period of growth from those occurring during the period of adult life.

First.—Acute surgical emergencies develop more rapidly and progress toward a fatal termination more quickly in children than in adults. Correspondingly, they show a more rapid and satisfactory recovery after successful treatment. Early diagnosis and early operation are of paramount importance on this account. Differential diagnosis of the acute surgical abdomen, so difficult in the adult, becomes at times almost impossible in the infant and young child.

Second.—The patient is quite often too ill, too frightened, or too young to give anything approaching an accurate account of symptoms, therefore one has to rely almost entirely on physical signs, and on a history which should be carefully elicited from all available sources. Questions should be as simple and direct as possible.

In cold weather abdominal palpation should be done very gently and with the hand very warm, starting where no tenderness is expected and approaching the suspected spot. The facial expression, defensive reactions, and reflex movements help to constitute objective findings. Great help might be obtained with light anesthetic in such cases, especially in searching for tumor and bimanual examination, with one finger in rectum and other hand on abdominal wall, allowing exploration of the whole pelvis and the lower part of the abdominal cavity. In the examination and judgment of the pains one must bear in mind that the epigastrium is for the child a sort of sensation center, and the child's ability to locate the pain is limited, both the more, the younger the child.

Third.—The fact that certain abdominal conditions tend to occur within definite age periods may point a finger toward correct diagnosis.

Fourth.—Pulse and temperature in the growth period are notoriously sensitive, and may be temporarily upset by some trivial cause, and on that account a sudden rise in anyone's temperature or pulse rate may have no special significance. If, however, a two-hourly chart is kept and a substantial rise in pulse and temperature is noticed, a valuable sign has been recorded, which may be the deciding factor in the diagnosis. Remember that the normal pulse rate decreases in rate steadily from birth to twelve years. Similarly the normal respiration drops from about thirty-five per minute from two months to the neighborhood of twenty-three per minute at twelve years.

In spite of occasional exceptions, extremes of temperature, pulse, and respiration rates, and great variations in their usual relationships should lead one to consider the condition medical rather than surgical.

Leucocyte and Differential Count.—The blood count should be considered an aid in checking diagnosis, practically never as diagnostic within itself. Extremes of high, low, and differential counts, which should be made in every sick child, should give pause for thought, but should never be considered conclusive.

Urinalysis.—The gross appearance, presence of albumin, casts, sugar, blood, pus, crystals, bacteria, bile, et cetera, may help exceedingly in helping to arrive at the diagnosis of a case. An inflamed appendix can produce both pus and blood in the urine.

Physical Appearance of Child.—Is he emaciated or fat, flushed or pale, restless or apathetic? Is his breathing rapid, shallow, abdominal, or thoracic? Are his legs drawn up in pain, or to protect a tender abdomen? Is he distended or scaphoid? Are there enlarged veins, birthmarks, contusions, or abnormalities of the umbilicus or of the genitalia? Is there a visible mass or abnormal peristalsis?

We will try to discuss some of the most

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*Read before the Tennessee State Medical Association, Nashville, April 12, 13, 14, 1938.

important conditions causing abdominal pain in children.

Colic.—Flatulence is commonest cause of infantile colic. It is due either to the excessive gulping of air, generally during feeding, or to fermentation of the intestinal contents, with the formation of gas. Constipation is also a cause of colic in young infants. The behavior of a child during the act of colic is characteristic. He flexes his knees and hip joints, clinches his fists, and cries lustily until the attack passes off.

Anal fissure is a condition which may occur in quite young children. Generally, as a result of careless use of enemas, syringes, or from scybalous distention of the rectum, spasm of the sphincter ani results, and the pain manifests itself in quite a different fashion from that of alimentary canal. The infant screams, throws back his head, and stretches out his lower limbs, with the thighs pressed tightly together.

Colic in young babies is often associated with some degree of vomiting.

In cases of congenital atresia of the esophagus there is complete separation of the upper and lower esophagus. The upper one ends blindly in a sac about the size of the finger. The lower passes from the stomach, directly into the bifurcation of the trachea, rarely into the bronchea. This of course prevents the child's taking foods through the natural passage. When picturing that to ourselves, we get all the rest of the clinical picture. The abdomen is naturally retracted except the upper part. The air goes through from the lungs, through the esophagus, into the stomach. The upper part of the stomach is usually distended. If one watches such a baby, he will find that mucus is running out the mouth because it cannot swallow. Other variations of atresia, of course, do occur.

Concerning Pyloric Obstructions.—There are three things that enter into differential diagnosis. First, there are certain babies who in the first two or three days of life vomit a great deal, sometimes projectily. These are practically never true pyloric obstructions. The true hypertrophic pyloric stenosis begins very rarely before the end of the first, second, or third week, and most often it is later than that. The early vomiting is probably due to the fact that a child has a pretty hard time coming into the world and possibly the pressure on the head has to do with it. If we feed them and pay no attention to it, they will be all right in a few days. The bad thing to do is to go on supposition that it is serious and that all food must be withheld because it seems to induce vomiting.

Second, we come to the thing that in a way, spoken of clinically, at least is pyloric spasm. A true pyloric spasm will get well if we give enough atropine or phenobarbital. It does not make so much difference what the food is, provided it is one that does not make a large residue in the stomach, as raw milk does. There is one thing to remember about atropine. It is one of the few drugs that will cause a high fever. It does not do the baby a bit of harm. The other point is that patients with hypertrophic pyloric stenosis almost always have to be operated upon. A typical case of hypertrophic pyloric stenosis is one that has given a history that the baby has been quite healthy for about the first four weeks of life, has gained weight, and has been comparatively free from any digestive disturbances, then he has suddenly begun to vomit, lose weight, and become constipated. The vomiting is forced and projectile, and often the amount expelled is considerably greater than the quantity given at a single feeding. Irritability and crying, wide awake, anxious look, visible peristalsis, and a palpable tumor complete the picture.

These children do not actually suffer severe abdominal pain, and often their crying is due to hunger, but the forceable gastric peristalsis does produce a certain amount of subacute pain.

The discovery of a palpable tumor which is more easily found under anesthesia is pathognomonic, but frequently no lump can be felt. Operation should not be delayed on this account, surgery is thoroughly indicated once the diagnosis is established.

Intussusception.—This is a dramatic abdominal emergency. The great majority of cases occur in children from six months to two years of age. The history generally given is that the child was quite well, when he suddenly got an attack of abdominal pain and screamed lustily. This attack passed off fairly quickly and was succeeded by less severe attacks of colic and possibly some vomiting. In between the attacks, the child lay fairly quiet. Quite often one is lucky enough to get a history of the passage of blood and mucus from the anus.

The general appearance of the child is striking. He lies quietly in bed between the attacks of pain and looks shocked and anxious.

On palpation the abdomen is quite soft and the characteristic rounded or sausage shaped tumor may be felt. If the clinician is in doubt, an anesthetic should always be given as palpation of the tumor is almost pathognomonic. Rectal examination may reveal blood and mucus on the examining finger. The presence of an appreciable amount of feces in the rectum negatives intussusception except in very early stages of the illness. In advanced cases the apex of the intussusception may be felt by the examining finger in the rectum.

It is well to remember that in starting well up into the ileum blood may not be passed per rectum for some time.

Acute enterocolitis in an infant may sometimes simulate intussusception. The crucial point in the diagnosis is whether complete intestinal obstruction is present or not. The presence of bile in the blood and mucus on the napkin after the first motion or two is strong evidence in favor of enterocolitis and a persistently raised temperature and the vomiting and diarrhoea at the onset will always check the diagnosis.

Food allergy may cause severe abdominal pain and sometimes simulates the surgical abdomen. It may be the cause of recurring attacks. The cause may be likened to toxins, but from food in this case. It is likely that lesions similar to urticaria, canker sores, dermatitis, and angioneuritic edema also occur in the gastric and intestinal mucosa. Allergic spasm in the sigmond and rectum is not infrequent.

At the onset of or during the course of infections, tonsilitis, influenza, measles, and varicella, acute abdominal pain may be due to the toxin on abdominal muscles or intestines.

One of the things one always has to think of when there is a hemorrhage from the bowel is the possibility of purpura, especially Henoch's purpura. It is, however, a very rare condition, and generally occurs in children four years or over. With this form there is sudden pain in the abdomen and then some blood in the stools. Usually there exists at the same time ecchymosis elsewhere over the body but not always until the next day or the day after, so that sometimes the diagnosis is difficult at first.

Meckel's diverticulum is sometimes difficult to diagnose. If a child passes at one time fairly bright blood, another time fairly dark blood, this is of tremendous diagnostic significance. Big clots are significant. The very volume of blood that is passed occurs with very few other things except with a Meckel's diverticulum and alone justifies an operation. However, all cases of diverticuli do not pass blood.

In dealing with abdominal pain in children over two years of age one may divide cases into two main groups: those with and those without diarrhoea.

The cases with diarrhoea are due, with few exceptions, either to dietetic indiscretions or to bacterial irritation of the bowel. Unusual causes are abdominal tuberculosis and primary pneumococcal peritonitis. Both are rare diseases.

Appendicitis.—"Appendicitis, while very rare before the second birthday, is not unknown in infancy. . . . The incidence of the disease increases steadily with advancing age."

"The pathology differs from that of appendicitis in adults in two main points: The thinness of the wall of the appendix allows a rapid spread of the infection to the peritoneal surface, and the protective omentum is relatively thinner and shorter than in adults. It follows, therefore, that general rather than local peritoneal involvement is to be expected in unfavorable cases, and that, if localized abscess formation does occur, secondary rupture into the general peritoneal cavity may be confidently expected. For this reason the Ochsmer

Sherren method of expectant treatment in late cases is not advocated as a routine procedure in children."

In a typical acute case the clinical picture differs little from that of appendicitis in adults; there is the classical history of epigastric or umbilical pain, or sometimes pain all over the "stomach," in the right iliac fossa. At this stage the temperature is generally in the region of 101 degrees, and only very occasionally exceeds 102 degrees.

Cases are seldom seen before the pain is thus localized, but every effort should be made to get an accurate account of events from the very onset of the illness.

Careful abdominal investigation reveals tenderness on pressure in the right iliac fossa; guarding on pressure is frequently very pronounced in children, but true muscular rigidity is absent unless the parietal peritoneum is already involved.

Skin hyperesthesia is a valuable sign and a pin run lightly over the skin will often reveal a sensitive area of varying extent on the right side, between the umbilicus and the inguinal region. Low hyperesthesia in this area is suggestive of very early pathological changes, while high hyperesthesia is suggestive of the fact that the inflammatory process has already spread to the peritoneal coat of the appendix. Bimanual rectal examination should never be omitted. White cell and differential count are useful adjuncts in cases which have to be distinguished from the alimentary colic.

Most difficulty in diagnosis is experienced when the appendix lies in an abnormal position and the possibility of this should always be remembered in delicate cases.

Pelvic appendicitis often gives rise to great difficulty in diagnosis. Low initial pain, painful and frequent micturition in the absence of pyuria, a positive obturator sign, or suspicious abdominal distention may give the clue.

Do not forget that pelvic abscess may form, remain latent for several days, and then suddenly rupture and cause rapid peritonitis.

Again bimanual rectal examination may be of value and is often the sheet anchor.

In retrocecal appendicitis, vomiting is generally absent, owing to the noninvolvement of the peritoneum, and the close proximity of the appendix to the retroperitoneal muscles may produce a positive result to the psoas test; pain and tenderness in the cases may be referred to the loin.

When the appendix lies in close relationship to the mesentery of the terminal part of the ileum, vomiting is early and persistent, and obstructive symptoms develop rapidly. This type is fortunately rare.

In some cases of imperfect descent of the secum the appendix may actually be located in the neighborhood of the pyloris and an upper abdominal lesion is simulated.

Differential Diagnosis. — Acute pyelitis may cause some difficulty. A female child complains of vague abdominal pain, vomits, and has a rise in temperature. Remember that dysuria and frequency of micturition may not be present, and microscopic examination of urine should not be confined to patients having these symptoms.

The high temperature and sudden onset, often accompanied by a rigor, are suggestive features as well as the early constitutional disturbance and mental irritability. Microscopic examination of the urine reveals pus cells and motile bacilli, and clinches the diagnosis.

Remember, however, that few scattered pus cells in a centrifugalized catheter specimen of urine are not sufficient evidence on which to base a diagnosis of pyelitis in the absence of other clinical evidence.

Cyclic vomiting is a condition the age incidence of which more or less coincides with appendicitis. In a classical case the early onset and persistence of vomiting and the presence of headache and the absence of abdominal pain, or its milder, or frequent previous attacks of a similar nature generally induced by some unusual excitement, often gives the clue. Considerable difficulty may be experienced when the vomiting is less than usual and the abdominal pain is more pronounced; the pain, however, remains in the umbilical area, and tenderness, if present, is somewhat vague and never localized; in these doubtful cases oral and rectal or even intravenous glucose administration will generally effect a rapid improvement. Careful observation and repeated examination will invariably prevent an error in these cases.

Pneumonia may be associated with abdominal pain and in certain cases may be easily mistaken for appendicitis, a difficulty encountered more frequently in children than in adults. One must guard carefully against an error which will submit a patient with early pneumonia to an anesthetic for removal of a normal appendix. Many of us have been guilty. In cases associated with diaphragmatic pleurisy careful examination of the chest may reveal pleural friction, but pneumonic area is not always basal, and all chest signs may be absent.

A history of sudden onset of pain with a high temperature and the absence of localizing tenderness, although the pain persists, makes one suspicious. An increased respiration rate and diminished pulse, respiration ratio, with some dilatation of the alae nasi, will serve to distinguish a supradiaphragmatic from an abdominal lesion.

Catarrhal jaundice, which is most prevalent from five to nine years of age, is hardly likely to cause any confusion, though upper abdominal pain, sometimes severe, is present for several days before jaundice appears.

Plumbism is a possibility which must never be lost sight of. The abdominal pain is colicky and spasmodic in nature and is referred to the umbilicus; also there is additional evidence of lead poisoning in chronic constipation, anemia, and gross basophilia.

Threadworm colic is in a different category. Here the attacks of abdominal pain often persist in spite of treatment and at times lead one to what appears to be an attack of appendicitis.

The discovery of threadworms in an appendix makes operation justifiable, as patients always develop ultimately an acute infective appendicitis.

Occasionally one is confronted with a case in which there is a definitely palpable and tender mass in the right iliac fossa, with a positive psoas sign, moderate temperature and general malaise. Do not rush headlong into a diagnosis of appendiceal abscess, for careful investigation may reveal impetiginous sores on the right leg with some tender deep subinguinal glands; the mass is an abscess lying retroperitoneally on the ileo-psoas muscle and is secondary to pyogenic infection of the external iliac lymphatic glands.

"Osteomyelitis of the ilium tends to reach the abdominal surface of the bone and to give rise to an abscess in the same location.

"Again, a circumscribed swelling may appear in the right iliac region associated with abdominal pain, but careful palpation will demonstrate the superficial nature of the swelling; incision will reveal a localized abscess, situated between the muscle layers of the abdominal wall."

Treatment.—Operation should never be delayed once the diagnosis of acute appendicitis is made.

DISCUSSION

DR. L. E. DYER (Greeneville): I just want to state that we all agree with Dr. Mathes on the imperative need of immediate operation when a diagnosis of acute appendicitis is made in a child. In addition to that, I think it is very timely to caution us not to lose sight of a little medication. It is a good plan with a young child that is quite uncomfortable and during the interval that takes place for the diagnosis and the laboratory work, while we are in fact arriving at the diagnosis, to make the child a little more comfortable. A light hypodermic of a small amount of codeine and pantopon will help a good deal to give comfort to the child before it is transferred to the hospital, and it also has a good effect on the parents of the child.

RECENT ADVANCES IN THE MANAGEMENT OF DIABETES MELLITUS*

R. C. Derivaux, M.D., Nashville

THE DEVELOPMENT of delayed or "slow-acting" insulin is preeminently the outstanding contribution to the therapy of diabetes of the past decade. Long anticipated and variously sought for, it was arrived at by Hagedorn and his co-workers who combined the simple protein protamine with regular insulin, thereby precipitating the active material and which, when injected in the form of a suspension, requires solution in the body fluids to slowly regain its characteristic properties. The new product, to which the name protamine insulin was given, was found to indeed continue its influence for extended periods of time, to be comparatively "shockproof," and hence enable patients whose limitations require multiple doses of original unmodified or "regular" insulin to now enjoy a less restrained and more nearly normal way of living.

That the new material had the advantages claimed for it was early confirmed, and it remained but to further ascertain that the addition of a small amount of zinc to the mixture not only preserved the stability of the suspension but also enhanced and further prolonged its blood sugar lowering effects. The product, now known as protamine zinc insulin, has been commercially available for more than a year and a considerable clinical experience, as attested by an already voluminous literature, has shown its anticipated advantages to have been convincingly demonstrated. Protamine zinc insulin is today for the majority of diabetics the insulin of first choice; smoother in effect, relatively safer as to overdose hazards and often more economical as to unitage required, its particular advantage lies in the fact that single dose control is frequently attainable and that hitherto troublesome overnight hyperglycemia can almost always be abolished. Thus, as a clinical advance, slow acting insulin finds its first practical realization in the protamine zinc compound and thereby marks a new era.

Conjointly may be mentioned as an "advance" of practical advantage the availability of somewhat greater dietary liberality in maintenance schedules. Relatively higher allotments of carbohydrates, particularly in the routines of juvenile diabetics, have been shown to be not only practicable but prophylactic as well in that, as more nearly normal living customs are approached, dietary and disciplinary "breaks" may be largely prevented. Finally, and more especially as they may be now more advantageously employed in conjunction with the slower acting insulin, relatively higher carbohydrate dietary allotments offer the most effective safeguard against hypoglycemic reactions which, even when but of mild character, may still entail disaster because of accidents, or and if of sufficient intensity as to be convulsive may be not without serious possibilities of permanent cerebral changes.

Other advances, still under experimental scrutiny, include insulins modified by procedures other than combination with protamine and of which there are several, and finally and most recently the possibly revolutionary announcement by Young ("Lancet," August 14, 1937) of the first experimental production of a true and permanent diabetes in the dog by the daily injection of an anterior pituitary extract. Of the ultimate portent of these developments the future only can show.

An undeniable increasing incidence of diabetes and a universally rising mortality offer a serious challenge however to whatever claims might be made as to the newer advances in knowledge and technique, and suggest once more that learning to use better what is already known may be more important than to seek still further improvements. Granting that diagnoses of diabetes are being made with greater accuracy than ever before and that populations in the various parts of the United States are growing older, (and living hence into the decades of increasing frequency of diabetes), it is nevertheless hardly possible to account for the increasing number of diabetics discovered by these explanations alone. No more neither can a rising mortality be explained altogether by citing an increasing accuracy in the assignment of causes of death.

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*Read before the Tennessee State Medical Association, Nashville, April 12, 13, 14, 1938.

For 1937 there have thus far been reported 324 deaths from diabetes, almost one per cent of the total of 29,588 deaths from all causes and since the past three years—just the double of the proportion of fifteen years ago. In 1936 there were 331 deaths ascribed to diabetes, and in 1935 there were 329. If the general rate of diabetic incidence be assumed to be about the same in Tennessee as is estimated for the United States as a whole—about 0.33 per cent of the total population, there are now living in Tennessee a total of about 9,200 diabetics, of whom 7,600 are white and 1,600 colored; computed from the 264 white and fifty-three colored deaths during 1936, such a distribution would show that case-fatality ratio for both races is alike at about 3.4 per cent and that for each death ascribed to diabetes the coexistence of about extant thirty cases may be presumed.

These approximately 9,200 living diabetics with 330 annual deaths summarize the problem in the face of which it is proposed to discuss "advances." The latter have an important place but the rising figures suggest that better care for the many will probably be at least as necessary as superlative attention for the few if statistical reflection of our efforts are to show improvement. Diabetic coma, however well withstood in the young, is still too frequent and too fatal, and when coma deaths occur in other than the aged, one wonders whether such deaths may not have been needless; the exception "in other than the aged" is appropriate, for diabetes and diabetic coma are undoubtedly often written into death certificates among the other causes of death of the very old merely because the decedent was incidentally diabetic and unconscious before exitus; of the possible magnitude of this sort of statistical error I know of no way of learning.

It may not be redundant to reaffirm that unless provision is made to base one's plan of management of his diabetics on a firm and comprehensive physiologic approach, good results are simply not attainable. Saying this is not to deny that there are occasional mild cases seemingly which do quite well and live to advanced ages on the sketchiest of programs. Elaborate and equally comprehensive routines are by no means indispensable in every instance; on the contrary, it is a mistake to try to adhere to unvarying standards and handle all situations alike. But, and as has been repeatedly pointed out since originally noted by Von Noorden, there is no dependable way of identifying the truly mild cases in advance; cases originally of seemingly mild character often enough present notable difficulties later, just as one may at times find the reverse to be equally true; an insulin response test, as proposed by McBride, may be of some help in deciding this. It is well to remember however that a judgment of mildness is perhaps best made in retrospect rather than in advance.

Dietary Considerations.—Every diabetic, by the very nature of his disorder, is limited in his capacity for the utilization of his foodstuffs; the degree of this limitation, his "tolerance," is largely the measure of his involvement. If tolerance is within what is attainable by relatively simple dietary regulation, a satisfactory dietary program need comprise only what limitations may be required to maintain urinary sugar and symptom freedom and relative normoglycemia; if the situation is more involved, more exact routines will be required and in most instances the use of insulin is indicated. I still employ in uncomplicated situations in adults the simple formula "1, 2, 1.5" (one gram protein, two grams fat, and 1.5 carbohydrate per kilogram of ideal average or "standard" body weight and which yields twenty-eight calories or a basal assignment of twenty-five calories plus twelve per cent) in prescribing the preliminary or "test" diet, with or without a small and tentative amount of regular insulin until sugar freedom is attained; the diet is then increased, usually by the addition at first of thirty grams of carbohydrate (ten grams at a meal as a matter of easy convenience), later by subsequent increments until a total *of about 150 grams* per day is attained and beyond which I seldom go; fat may be simultaneously reduced by omitting ten grams for each thirty of carbohydrate (theoretically exact ratio is 1:2.25) until the diet is at its final desired level, both as to carbohydrate and total calories.

I have been criticized as being overconservative and perhaps a little timorous as regards the higher carbohydrate allotments (such as an original distribution perhaps of 1, 1, 3), to such comments I can only reply that in my hands the extremes of carbohydrate liberality simply do not work if one examines closely enough and my patients are too often and too badly out of control. Is it not practicable perhaps to meet this by simply ordering larger and more frequent doses of insulin? I have not so found it; it has been my experience that and even with fast-acting regular insulin, my patients are oscillating between high hyperglycemia with glycosuria and hypoglycemic shock, and with protamine insulin they are sugar free usually at the first test of the morning only, and perhaps also hypoglycemic. As these trials have been made with private and not unintelligent patients, their mental reaction to such wide swings have also not been happy as it is not easy to harmonize the heavy glycosuria which they encounter at their home tests with the admonitions they have received as to the importance of maintaining their sugar-freedom as consistently as possible. I have hence used the so called "higher" carbohydrate diets rather conservatively and I note that in this I am by no means alone.

When protamine insulin is being used and the diet not excessively high in carbohydrate the situation is different and it is only necessary to re-educate the patient, if previously on the old insulin, that a *transitory* glycosuria, especially if occurring at the middle of the forenoon, may be disregarded. I have had recourse to the word "flash" glycosuria in designating such spills as may occur in single voidings only and represent actually only fractional amounts of sugar. Joslin, recognizing this and other differences, has repeatedly suggested that old patients doing well on regular insulin and whose requirements were not too onerous be continued on its use and not changed to the newer product.

With juvenile patients, higher carbohydrate dietaries are a real advantage. An easier discipline, a guaranty of an adequate food intake, and the avoidance of hypoglycemic reactions, so often sudden, extreme and convulsive, make them ideal. The food requirements of a child are between double and triple of those of the average adult and fruit or other food between meals is among childhood's luxuries. Higher carbohydrate dietaries, and especially as used in conjunction with slow-acting insulin, make juvenile living routines almost normal and hypoglycemic reactions may be practically abolished.

The division of the daily carbohydrate allotment into one-fifth at breakfast and two-fifths at each of the other meals has been recommended by Hagedorn and others when protamine insulin is being given so as to anticipate the sharper post-breakfast rise in blood sugar and thereby prevent or at least minimize the already referred to "flash glycosuria"; I have not found this important or especially helpful and I accordingly order a usual distribution in thirds; with juveniles however it is advantageous to give a fifth at each meal and thereby make available two or three ten-gram equivalents for servings of fruit or perhaps of milk between meals and for reasons already mentioned.

The Use of Insulin.—The decision as to whether insulin is to be used at all is perhaps far more important than the choice as to which insulin may be best and there is little doubt but that we may be failing conspicuously to give our patients the advantage of what we know when and for whatever reason we decide that they may be controlled without it. Too many diabetics die *of diabetes* without having had the help of any insulin at all or else of having been given perhaps a few small doses only when in extremis; this may be because of their own prejudices or else possibly because of our unwillingness to insist on more comprehensive programs. A freer use of insulin should go the farthest in reducing our present diabetic mortality. The old and general rule for human behavior "when in doubt, don't" deserves reversal here and the use of insulin of one sort or another should be insisted on if there is the slightest doubt as to the sufficiency of dietary regulation alone.

The amount of insulin to be given and the number of doses required may be stated thus—whatever is needed to secure control. I know of no rules nor of any way of predicting probable requirement. It is safest to begin with small amounts, possibly more so with the elderly among whom hypoglycemia may be badly withstood, and increase until adequate supplementation has been attained, and practically continuous normoglycemia secured. The ultimate dosage is "whatever it takes" and in this one encounters the widest variations among cases that superficially appear to offer no other dissimilarities.

Protamine insulin is for many the insulin of greatest utility. A single dose, given usually at breakfast time, may be all that is necessary in the way of supplemental help. Recalling that it is slow acting and that its force may not become effective for from eight to fifteen hours, it is frequently necessary to give at about the same time (never mixed and in the same injection however) a smaller dose of regular unmodified insulin to take care of the post-breakfast rise in blood sugar; the majority of diabetics may be controlled by this type of administration without difficulty. Others may require a pre-supper dose as well though if this is ascertained after persistent trials, the specific advantages of protamine insulin are largely lost; hence it is important to strive for control by adjustment of the morning schedules. One danger in this regard is that of varying energy output; one of my patients, a carpenter, found it impossible to gauge his requirement as his tolerated and adequate dose for rainy or nonworking days was grossly excessive for mornings of heavy labor; another, a sedentary office worker, fell into a convulsive reaction as a result of having devoted a Saturday afternoon to raking up leaves. Other patients have had to be returned to multiple doses of the older regular insulin simply because of the impossibility of maintaining adequate control. On the other hand, where protamine insulin succeeds, the advantages are outstanding. Two points deserving mention in passing are these—local reactions, swelling and redness at the site of injection of protamine insulin with itching and an intensification of these developments at sites used earlier and as subsequent injections are given elsewhere, are extremely frequent; they begin perhaps after the first few days of use, persist for a week or so and then cease; they are seemingly phenomena of sensitization to a new protein and disappear as the tissues become accustomed to the foreign material. It is as important that this be as thoroughly understood by patients as is the fact that visual accommodation may be temporarily disturbed as an incidental of desugarization and undue alarm prevented. A second difference is that of the very different symptomatology and behavior of reactions to overdose; protamine reactions are slower in developing as a rule (though not always!) and may be much slower in being relieved by appropriate treatment; their first evidence may be headache only and this should be emphasized in the instructions given every patient and more especially so in the case of children.

The emphasis in this paper has been laid on aspects rather than "advances" alone and an endeavor has been made to urge better and more comprehensive routine care for a large number of diabetics and of whom a considerable proportion are seemingly dying unnecessarily each year. The point has been made without specific designation that such care is of necessity a "tailored-to-fit" program and that the diet and insulin solution of one individual's situation will by no means answer for another's.

A greater dietary liberality, an option as to which of the two now available insulins and how they may be best employed will best serve is a new challenge to our resourcefulness and one which will be met, with creditable statistical reflection, as the better therapeutic technology becomes more widely applied.

DISCUSSION

DR. W. E. BRYAN (Chattanooga): Mr. President and Gentlemen: The subject of new advances in the treatment of diabetes has been covered by Dr. Derivaux in a very fine way. There is only left for me some point of emphasis. First I wish to emphasize the fact that nowhere in medicine, surgery, or any other part of the curative art is more exact technic required than in the treatment of diabetes. Each case has its own peculiarities and must be dealt with individually. The starting point with each case, which of course is very elementary, is how much carbohydrate the individual can handle himself. This may vary from an infinitesimal amount to as much as sixty grams daily. With this knowledge a maintenance diet can be constructed, using the number of units of insulin to take care of the number of grams of carbohydrate not handled by the individual, keeping in mind that one unit of insulin cares for something like two grams of carbohydrate.

In beginning the use of insulin it is my opinion that the unmodified insulin should be used, remembering that unmodified insulin reaches its maximum effects in two to four hours after injection. This is not the case, of course, with the protamine insulin which requires some twenty-four hours or more for it to reach its maximum effects. The use of protamine insulin should not be considered in the treatment of diabetic coma nor in the presence of infections. It must be remembered that protamine insulin can only be given hypodermically, not intravenously. It is my opinion that protamine insulin is adapted for use in certain cases of diabetes where regimen of treatment has already been established. In these it has the advantage over unmodified insulin in that it does not have to be injected more than one time daily.

I do not mean to disagree with Dr. Derivaux outright, but it is my opinion that protamine insulin, while it is a very helpful adjunct in the treatment of diabetes, is not definitely designed to take the place of the unmodified insulin.

DR. R. C. DERIVAUX (closing): I am indebted to Dr. Bryan for the things he had to say. I failed to make myself clear if I left the impression that I regarded protamine as the insulin necessarily of first choice universally. I do not regard it as anything of the sort. It has a place, and a very decided place, and it has advantages which are incomparable when they work.

I think all of us perhaps anticipated the arrival of protamine insulin with slightly more enthusiasm than the results given us have altogether justified. That does not diminish its advantages under the right conditions.

What I tried to stress and perhaps should have made a trifle more emphatic was that protamine insulin should be borne in mind and given every opportunity to do what we hope a retarded insulin can do—single dose control.

I agree heartily with what Dr. Bryan has said. I made no mention in my paper, and I am grateful to him for having brought up the point that it has no place whatever in the treatment of complications. This is counter, for example, to what has been reported from Rochester at the Mayo Clinic where Dr. Wilder used it with a certain success in the management of gangrene, in the management of coma, and so forth. I am not able to subscribe to that. I would greatly prefer multiple doses of a faster-acting product under circumstances of that sort.

To reiterate and give additional emphasis to one point, let me say once more that I think the problem before us is, instead of seeking out the new and perhaps the more highly refined, to better use the agencies now at our command, to be a little bit more critical perhaps of our own efforts in looking after our diabetics, and see if we cannot show a decline in a mortality which, as things now stand, cannot be regarded as other than intolerable.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
Devoted to the Interests of the Medical Profession of Tennessee
Office of Publication, 508 Doctors Bldg., Nashville, Tenn.

Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 15, 1932.

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H. H. SHOULDERS, M.D., Editor and Secretary

NOVEMBER, 1938

THE ISSUE
SHALL PATIENTS AND DOCTORS RETAIN THEIR FREEDOM OF JUDGMENT IN THE MATTER OF MEDICAL CARE, OR SHALL THIS FREEDOM BE SURRENDERED TO SOME GOVERNMENTAL AGENCY?

EDITORIAL

The Issue

Shall patients and doctors retain their freedom of judgment in the matter of medical care, or shall this freedom be surrendered to some governmental agency?

So much literature has appeared in medical publications and in lay publications, in recent months, on the question of socialized medicine that the real issue seems to have been lost. It is, therefore, essential that we dig down into this mass of literature and bring out a statement of *the issue* which the people can understand. The statement above is a result of just that effort.

The people of this country were never so eager for information on this question as at the present time.

Persons who are well informed and who have read much of the literature that has appeared seem to have gathered no idea of the fundamental issues involved.

Much of the literature that has appeared was cleverly designed to accomplish a definite purpose. It falls very definitely into that type of literature commonly regarded as propaganda.

It is designed to convey to the reader the idea that the proponents of this movement have in mind the delivery of medical care, at public expense, to people who do not receive adequate care now. This, of course, is not true.

The idea is to promote a system of practice which will directly or indirectly, immediately or ultimately, place patients and doctors under the complete domination of a governmental agency. The result of such a step of course is that both patients and doctors lose their freedom of judgment.

The medical profession has never opposed an adequate health program for the protection of public health. The medical profession has opposed the expansion of health departments to embrace individual medical care.

The medical profession has never opposed government aid in the financing of medical care to the indigent. Every municipal hospital and every county hospital in this country, in which doctors give free services to indigent patients, is a living example of this fact.

The medical profession does oppose the idea of vesting in some federal agency the power to spend the taxpayers' money in the field of medical care on such a basis that the freedom of judgment of patients and doctors is destroyed and a communistic form of practice established by decree.

Miss Josephine Roche, as third assistant secretary of the treasury, expressed the idea that the activities of public health departments be expanded to embrace individual medical care.

This expression was not an idle statement by an uninformed person. It was the statement of a person in a very important position in the federal government having to do with the public health service.

The dangers involved in just this type of expansion are apparent, but must be considered.

Let's assume that a large sum of money is placed to the credit of the Interdepartmental Committee or the Surgeon General of the United States Public Health Service to be allocated to state departments for health projects and for medical care projects of various sorts and then to be allocated to counties and municipalities by the state departments. State, counties, and municipalities would benefit only upon the conditions that their plans meet the approval of the central agency at Washington. The power vested in a central agency in Washington would be sufficient to deprive the most needy of aid unless the conditions of the central agency are complied with.

By vesting in a federal agency the power to allocate money and to withhold the allocation of money is sufficient to compel the adoption of policies by state departments which they naturally would and should oppose. It would have the same effect on local health departments.

By this step alone a communistic form of medical practice could be established in the United States.

By the manipulation of federal money the complete control of the policies and maybe the personnel of every state, county, and municipal health department of the United States could be accomplished.

This question naturally arises, "Is there not some method by which the federal government may participate in financing the medical care of indigent persons without vesting in any agency the powers to allocate or withhold the allocation of monies?"

In our opinion, it can be done by a method which is simple. First, define "indigency." There is urgent need at this moment for a definition of the term "indigent." There is too much news in the press today with regard to the use of relief money for campaign purposes.

Second, register those who qualify as indigent under the definition.

Third, place in the hands of indigent persons thus registered the power to obtain medical care without being bound to submit to the dictates of any agency.

Fourth, let a central federal agency fix the fees for professional services rendered indigent persons by doctors and hospitals.

Fifth, let the fee be paid only upon the condition that (a) the services were needed, and (b) the services delivered were adequate.

Such a plan vests in no state agency the power to destroy the freedom of judgment of either the patient or the doctor. Such a plan would not place in the hands of a federal bureaucracy the power to dictate the conditions under which federal monies would be spent in the field of medical care. Such a plan would not vest in some federal bureaucracy the power to withhold care to those who need the care. It would make available to all indigent persons the same medical care that is received by the well-to-do people.

The suggestion has been advanced that these indigent persons might not avail themselves of the best medical care available if given such liberties.

There are several replies to such a suggestion. First, every doctor has been examined as to his fitness to practice. This affords protection. Second, it is a bit strange that any one would suggest that such persons should vote for president, senator, congressman, governor, on bond issues and tax questions which affect all the people and not be allowed to exercise his judgment when he, alone, is affected in the selection of a doctor.

Such a suggestion leads to the conclusion that there are those who would like to exercise a control over his medical care and his vote.

Yes, the issue is, "*The Freedom of Judgment of Both Patients and Doctors.*"

AN INCIDENT

Since the question of medical care has been agitated many individuals throughout the country are writing directly to the President of the United States for aid. Several such letters have been written by citizens of Tennessee. This office has received copies of three.

These letters seem to have made a tremendous impression in Washington. One of them was written by a man from Cookeville, Tennessee, in which was stated, in brief, the following alleged facts. He has a little girl seven years old with curvature of the spine. The girl had poliomyelitis at the age of seven months. He requests information as to what can be done. He also says that the girl is active and going to school.

On receipt of a copy of this letter this office wrote Dr. Shipley, the secretary of the county medical society at Cookeville, and received the following information: The author of the letter holds an important public office in Putnam County. His income is believed to be $4,500 per year.

Dr. J. T. Moore of Algood was the family physician of the party until the year 1935. His account with Dr. Moore, though small, became delinquent. Since 1935 he has consulted Dr. Fred Terry of Cookeville. Dr. Terry has received payment for services rendered the family in the amount of $2.00 since the year 1935. The balance of his account, amounting to not more than $30, has not been paid.

Dr. Terry says the girl has a curvature of the spine in the thoracic region which he does not attribute to poliomyelitis.

He advised the father to bring the child to an orthopedist in Nashville. An inquiry reveals that the orthopedist named never did see the child. Apparently she was never brought.

Several questions naturally arise in connection with this case. First, is the condition of this child due to lack of doctors and medical facilities, or is it due to parental neglect? Is the condition of this child due to poverty? Has the question been agitated to where people now feel it is proper and honest for them to demand that taxpayers carry their individual burdens?

THE DIFFERENCE BETWEEN WORDS AND ACTIONS

We chanced to run across the following statements in quotations attributed to C. E. Waller, United States Public Health Service:

"I should like particularly, at this point, to make it clear that the Public Health Service has no jurisdiction whatever over local health matters entirely within the states. You probably recall that the Constitution of the United States reserved to the states all powers not specifically delegated by the Constitution to the federal government.

"Control over local health matters wholly within the states was not among the powers delegated to the federal government by the Constitution.

"I also wish to emphasize the fact it is not the aim of the Public Health Service in carrying out this or any other program, to establish a huge federal machine which will have control over all state and local health work in this country.

"It is our purpose, on the other hand, to aid the state and local authorities in developing further their own organizations and programs.

"The last thing we wish to do is to break down the local sense of proprietorship and the sense of responsibility, among the local people, for support, financial and otherwise, of their own institutions."

We took occasion to make inquiry of the chairman of the Board of Health of Tennessee as to whether or not this policy is followed in actual practice. The reply was that no federal monies are allowed until the plans and all conform to the wishes of those in Washington.

We well remember the old practice of the lightning rod salesman. The salesman would make the fairest promise on earth until the customer's name was fixed on the dotted line. Then another person would go and do the collecting.

This statement attributed to Dr. Waller is a very fair statement of principles to which all can agree. It is a statement of principles which doubtless is being violated, notwithstanding his contentions to the contrary.

RESOLUTIONS

FAYETTE-HARDEMAN COUNTY MEDICAL SOCIETY

Whereas Dr. Harold D. Haney has been taken from us by untimely death, and

Whereas his passing brings to us an irreparable loss of a beloved friend and valued colleague.

Therefore Be It Resolved, That we the members of the Fayette and Hardeman County Medical Society greatly deplore the passing of Dr. Haney.

Be It Further Resolved, That we extend to his bereaved family our sincere sympathy and condolence, and that a copy of these resolutions be spread upon our minutes, a copy be sent to the family of the deceased, and a copy be sent to the State Medical Journal for publication.

G. T. Brinkley, *Chairman.*
W. D. Lewis, *Committee.*

NEWS NOTES AND COMMENTS

We have recently been told of two locations for doctors. One of them in Louisiana and the other near one of the large cities in Tennessee. In the latter place a doctor might have residence and maintain an office in the city.

Any one interested may address this office.

WOMAN'S AUXILIARY

President..........Mrs. H. E. Christenberry
Knoxville
President-elect................Mrs. Matt Murfree
Murfreesboro
Press and Publicity...........Mrs. Frank Fessey
Nashville

Shelby County

Mrs. Edward Mitchell, president, presided at the first meeting of the Woman's Auxiliary to the Memphis and Shelby County Medical Society last Wednesday. The meeting was followed by a luncheon and was held at University Center. Announcement was made of the Standing Committee chairman for the ensuing year: program, Mrs. Shea; public relations, Mrs. W. T. Braun; publicity, scrapbook and Red Cross, Mrs. W. T. Black; legislation, Mrs. J. A. Hughes; membership, Mrs. Allan Chester; contact, Mrs. Nash, Jr.; revisions, Mrs. O. W. Hyman; finance, Mrs. W. A. Ruch; exhibits, Mrs. Sidney Meeker; tuberculosis, Mrs. L. F. Boyd; maternal welfare, Mrs. C. H. Glover; resolutions, Mrs. T. F. Leatherwood; Hygeia, Mrs. W. G. Alford; benevolent, Mrs. H. W. Sale; needlework guild, Mrs. C. H. Glover; cancer control, Mrs. A. H. Meyer; better films, Mrs. W. T. Braun; luncheon, Mrs. J. T. Moss; equipment, Mrs. Thompson; room, Mrs. Louis Carter; telephone, Mrs. J. Cash King; hospitality, Mrs. E. M. Holder; entertainment, Mrs. C. G. Bringle; and social service, Mrs. Charles A. Bender.

Rutherford County

The first meeting of the season of the Woman's Auxiliary to the Stones River Academy of Medicine met on October 21 at the home of Mrs. B. R. McKnight with Mrs. Van Hook as cohostess. The high light of the meeting was the talk given by Mrs. J. E. Lester of Nashville, five years national Hygeia chairman, on the subject of socialized medicine. Mrs. Lester said, "One result would be a mental lethargy on the part of those doing medical research because individual initiative would be lacking."

The auxiliary voted to join the Murfreesboro Council of Social Agencies and the improvement of the Nurses Home at Rutherford Hospital was adopted as the project for the year.

Mrs. Matt Murfree, board member of the Tennessee Medical Auxiliary, reported on the meeting held in Nashville in September. Mrs. M. B. McCrary, president, announced plans were being made for organization of an auxiliary at Carthage. Mrs. W. V. Sanford, program chairman, directed the program of the afternoon.

Davidson County

The Woman's Auxiliary to the Nashville Academy of Medicine and the Davidson County Medical Society met Friday, October 7, 1938, at the Y. W. C. A. Mrs. Joe Travenick, Jr., president, was in charge of the meeting and announced the program for the following year. Chairmen of the following committees were announced: finance, Mrs. Lynch Bennett; Girl Scouts, Mrs. James Kirtley and Mrs. James Hayes; hospitality, Mrs. C. M. Miller; Hygeia, Mrs. H. B. Bracken; immediate past president, Mrs. O. G. Nelson; legislation, Mrs. George Carpenter; membership, Mrs. Fowler Hollabaugh; philanthropic, Mrs. W. W. Wilkerson; program, Mrs. T. G. Pollard; public relations, Mrs. B. F. Byrd; publicity, Mrs. Theodore Morford; revision, Mrs. F. W.

Fessey; telephone, Mrs. Elkin Rippy; ways and means, Mrs. Earl McMurray.

Mrs. H. E. Christenberry of Knoxville, state president of the auxiliary to the Tennessee Medical Association, was present at the meeting. The following new members were elected: Mrs. Hollis Johnson, Mrs. Horace Gayden, Mrs. Roger Burrus, and Mrs. Ted Davis.

On October 24 the Woman's Auxiliary to the Nashville Academy of Medicine and the Davidson County Medical Society entertained with a dinner at Hettie Ray's Supper Club in honor of Dr. and Mrs. H. H. Shoulders. Dr. Shoulders is the new speaker of the House of Delegates of the American Medical Association and we are indeed justly proud of him.

In last month's issue of the JOURNAL I told you that we would have an outstanding piece of work to report, which would indeed prove that Tennessee is still leading the ranks as the "Pioneer State" of the Union.

We are all interested in Hygeia, and I know the entire membership of the Woman's Auxiliary to the Tennessee State Medical Society will welcome the news that during the last session of the state legislature a bill was enacted making possible the placing of Hygeia in 6,182 public schools in Tennessee. Tennessee is the first state in the Union to realize the necessity of stressing Hygeia and I know that it will be the means of enlightening many of its readers on subjects that are paramount in our minds relative to health in all its phases. We are proud to tell you that this splendid move was accomplished through the efforts of our own national past president, Mrs. Rogers N. Herbert. It is our sincere wish that every state in the Union will follow this splendid lead.

MEDICAL SOCIETIES

Davidson County:

October 11—"Occipitoposterior Position: Diagnosis and Management with Report of 1,400 Cases," by Dr. M. S. Lewis. Discussed by Drs. S. C. Cowan and L. J. Caldwell.

October 25—"Some Experiments with Fever Therapy in Urology," by Dr. J. C. Pennington. Discussed by Dr. Max Moulder.

November 1—"Lobar Pneumonia with Special Reference to Typing and Specific Treatment," by Dr. O. N. Bryan. Discussed by Dr. W. H. Witt.

"Case Report: Unusual Case of Peritonitis," by Dr. M. B. Davis. Discussed by Dr. R. C. Derivaux.

Dyer, Lake, and Crockett Counties:

The Dyer, Lake, and Crockett Counties Medical Society met in regular monthly session November 2, 1938.

Scientific Program

"Surgical Relief of Pain," Dr. R. E. Semmes, Memphis.

"Puncture Wounds of the Chest," Dr. Duane Carr, Memphis.

"Medical Treatment of Gall-bladder Disease," Dr. Conley Sanford, Memphis.

C. L. DENTON, *Secretary.*

Greene County:

The Greene County Medical Society met at the Andrew Johnson Clubhouse on Tuesday, October 11.

Dr. Hal Henard presented a paper on "Sepsis." Dr. I. E. Phillips opened the discussion.

The following members were present: Drs. M. A. Blanton, C. B. Laughlin, L. E. Dyer, H. W. Fox, W. T. Mathes, Hal Henard, R. S. Cowles, I. E. Phillips, and R. B. Gibson.

I. E. PHILLIPS, *Secretary.*

The Greene County Medical Society met at the Andrew Johnson Clubhouse, Tuesday evening, November 1.

Dr. Haskell Fox presented a paper on "Carcinoma of the Stomach." Dr. I. E. Phillips opened the discussion.

The following members were present: Drs. Haskell Fox, M. A. Blanton, R. S. Cowles, Claude Fox, H. B. Anderson, L. E. Coolidge, C. B. Laughlin, Hal Henard, and I. E. Phillips.

I. E. PHILLIPS, *Secretary.*

Hamilton County:

October 20 — "Coronary Sclerosis and Life Insurance," by Dr. C. R. Henry.

"Extrasystole's Etiology and Significance," by Dr. P. H. Levinson.

October 27—Meeting of Chattanooga Clinical Congress.

November 3—"The Acute Surgical Abdomen," by Dr. Homer D. Hickey.

"Tuberculous Peritonitis," by Dr. B. L. Jacobs.

November 10 — "Common Postoperative Complications," by Dr. Wm. G. Stephenson.

"Treatment of the Compound Fracture," by Dr. Frank Hobbs.

November 17—The following papers are scheduled to be read:

"Interesting Urological Case Reports," by Dr. Joseph Killebrew.

"Plastic Operations on the External Genitalia of the Male for Elephantiasis (slides and report of two cases)," by Dr. M. G. Roberts.

Hardin, Lawrence, Lewis, Perry, and Wayne Counties:

The Five-County Medical Society met in Savannah on October 25. The following papers were read:

"Tumors of the Breast," by Dr. F. W. Smythe, Memphis. General discussion.

"Medical Treatment of Gall-bladder Disease," by Dr. H. G. Rudner, Memphis. General discussion.

"Female Endocrinology," by Dr. James V. Hughes, Savannah. General discussion.

"Problems in the Diagnosis and Treatment of the Anemias," by Dr. Richard E. Ching, Memphis. General discussion.

The next meeting of the society will be held in Waynesboro, November 29, at which time officers for the year 1939 will be elected.

Knox County:

October 12—"Coronary Disease, Its Diagnosis, Prognosis, and Treatment," by Dr. Carter Smith, Atlanta.

October 18—"The Thyroid," by Dr. Lee K. Gibson, Johnson City.

October 25—"Anemias of Infancy and Childhood," by Dr. Oliver W. Hill, Jr.

November 1—"Preview Pictures of Intranasal Sinus Operation Life and Animation," by Dr. R. G. Reaves.

Washington County:

November 3—The society was the guest of the medical staff of the Veterans Administration Facility of the Mountain Home.

December 1—The election of officers is scheduled for this meeting.

Dr. E. T. West will read a paper on the "Treatment of Acute Appendicitis." To be discussed by Drs. G. J. Budd and Lee K. Gibson.

Shelby County:

October 18—"Case Reports: Eclampsia Complicated by Pneumonia," by Dr. J. E. James.

"Repair of Vesicovaginal Fistula," by Dr. P. C. Schreier.

Papers: "A Conservative Operation for Simple Ovarian Cyst," by Dr. F. W. Smythe. Discussion by Drs. P. H. Wood and M. W. Searight.

"The Childless Woman," by Dr. J. C. Ayres. Discussion by Drs. Carey Bringle and J. A. McIntosh.

November 1—"Case Reports: Tetanus with Recovery," by Dr. K. M. Buck.

"Xanthomatosis," by Dr. C. K. Lewis and W. D. Anderson.

Papers: "Hernia," by Dr. A. R. Porter. Discussion by Drs. J. L. McGehee and F. W. Fiedler.

"The Memphis Breast-Milk Station," by Dr. A. G. Quinn. Discussion by Drs. J. J. Hobson and E. C. Mitchell.

OTHER MEDICAL SOCIETIES

The Third Congress of the Pan-Pacific Surgical Association is to be held in Honolulu, September 15 to 28, 1939.

Communications for information should be directed to Dr. George W. Swift, 902 Boren Avenue, Seattle, past president of the association; Dr. Frederick L. Reichert, Stanford University Hospital, San Francisco, program chairman for the United

States; Dr. Howard Updegraff, 6777 Hollywood Boulevard, Los Angeles, vice-chairman; or Dr. Forrest J. Pinkerton, secretary-treasurer of the association, Young Building, Honolulu, Hawaii.

Meeting of Vanderbilt Medical Society, October 7, 1938

1. Case Report: "A Representation of a Case of Congenital Anomaly of the Back," by Dr. Thomas E. Wyatt.

This twenty-two-year-old white boy has previously been presented to this meeting. At this time he gave a history of having had a "bag of waters," which was attached to the back of the neck, removed on the day after birth. A sinus developed at the operative site and drained pus and then clear fluid for a long period of time. From birth there had been a thick growth of hair over this cervical region. He was perfectly well until six years ago, when he developed weakness of his legs which rapidly progressed until he was unable to walk. On physical examination we found atrophy of the muscles of both legs, hyperactive knee and ankle jerks, a marked scoliosis resulting in a tremendous deformity of the chest. There was an old operative scar over which hair grew.

Lumbar puncture revealed complete block with a total protein of 400. Skeletal traction was applied, but to no avail. Cervical laminectomy was carried out and a huge mass of bone was removed, which was apparently causing pressure on the cord which was flat and thin. Between the bone and dura was a collection of sterile whitish fluid which was evacuated. Wound was closed with drainage. Patient had a stormy convalescence, but recovered completely. It is now five months since operation. He is able to walk without difficulty and all neurological signs have disappeared.

This is a case of severe spina bifida occulta with paraplegia developing late in life and successfully treated by laminectomy. The case was discussed by Dr. W. deGutierréz-Mahoney.

2. "Localization of Trypan Blue in Areas of Inflammation Following Intravenous Injection," by Dr. R. H. Rigdon.

Trypan blue localizes and concentrates in areas of inflammation following an intravenous injection, provided the dye is given immediately following the injury. Trypan blue apparently does not concentrate in areas of inflammation produced by xylol when it is injected twenty-four hours after the irritant. It would seem that localization and concentration of dye in areas of inflammation is influenced by some temporary change which occurs in the capillaries and tissue in the interval between the injection of the irritant and the injection of the dye. The dye localizes first and in the greatest amount in the area where the irritant is last applied. The dye is concentrated in the areas of inflammation long before leucocytes reach the tissue.

This paper was discussed by Dr. Herbert Wells.

3. "A Report of Twenty-One Cases of Acute Glomerular Nephritis Treated with Sulfanilamide," by Dr. Robert H. Williams.

This is a preliminary report of studies carried out by the author at the Johns Hopkins Hospital in collaboration with Dr. W. T. Longcope. Twenty-one patients with acute glomerular nephritis were treated with sulfanilamide. The course of these patients had been followed for two to eighteen months. Comparisons of those individuals with seventy controls indicated that in the former group the foci of infection cleared up more rapidly, the signs of renal damage disappeared more rapidly, the exacerbations of nephritis following tonsillectomies occurred less frequently, the duration of edema, hypertension, and hospitalizations was less, and there was a greater incidence of clinical recoveries.

Dr. Williams' paper was discussed by Drs. Paul Lamson and Katherine Dodd.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Building, Nashville

A Proposed Method for Evaluating the Safety of an Anesthetic. Kibler. Current Researches in Anesthesia and Analgia, September-October, 1938.

In experiments using tadpoles in tanks of water treated with concentrations of various narcotics such as ether, ethyl alcohol, N-butyl alcohol, paraldehyde, pyridine, chloroform, and nitromethane, narcotic and lethal concentrations were observed.

It was found quite safe to narcotize deeply for an hour and half.

Exposure beyond two hours frequently results in death. In deep narcosis death is nearly approached. In ethyl alcohol narcosis there is a very small margin separating it from the lethal dose.

Profound intoxication becomes fatal with very little addition of the narcotic agent.

DERMATOLOGY

By E. E. Brown, M.D.
Doctors Building, Nashville

The Value of Irradiated Ergosterol in the Treatment of Acne Vulgaris. Josephine Hinrichsen, M.S., M.D., and A. C. Ivy, Ph.D., M.D., Chicago. Illinois Medical Journal, July, 1938.

The authors carefully studied 210 patients with the various forms of acne. A count of the comedones, papules, and pustules was made, and the severity of the disease was graded by the method of Bloch. One hundred seventy-eight of the patients continued treatment until dismissed or other forms of therapy were instituted.

The treatment consisted of a solution of activated ergosterol in oil in two types of dosage. Low dosage, 20,000 to 30,000 U. S. P. units daily. High dosage, 100,000 units daily. Serum, calcium determinations were made in the case of high dosages. These varied from 11.1 to 12.8 milligrams per cent after treatment. None of these patients showed any detectable untoward effects even after six months' treatment.

The authors were of the opinion that a definite and practical improvement may be obtained by the daily administration of 20,000 to 30,000 units of irradiated ergosterol in about twenty per cent of the patients with acne vulgaris after from two to eight weeks. To maintain the improvement it is necessary, in most cases, to continue treatment over a longer period of time. Approximately thirty per cent of those who fail to manifest a practical improvement on the above dosage will do so on 100,000 units daily.

Their results indicate that irradiated ergosterol was by no means a specific in the treatment of acne. It does, however, have definite merit and should be used to augment other forms of treatment, such as administration of a well-balanced, high iron, and high vitamin diet, the correction of constipation, skin hygiene, ultraviolet light, X-ray, etc.

OBSTETRICS AND GYNECOLOGY

By Hamilton V. Gayden, M.D.
Suite 234 Doctors Building, Nashville

The Pelvic Joints During Pregnancy and Labor. D. J. Thorp and W. E. Fray. Journal of the American Medical Association, 111: 13: 1162, September 24, 1938.

This report is confined entirely to observations of the physiologic diastasis of the pelvic joints during pregnancy and labor. Separation of the symphysis pubis in the opinion of the authors benefits the patient in cases of occiput posterior in at least nine of the cases observed.

A portion of this report pertains to the influence of separation of the joints on the course of labor. Seventy-eight cases are reported and thirty-four or 43.6 per cent showed a definite widening of the symphysis pubis averaging five millimeters. In thirteen cases of separation of the joints the infant was in the occiput posterior position and in nine rotation took place spontaneously after a separation of the symphysis of seven millimeters or more. In four cases of occiput posterior position manual aid (rotation) was required, and X-ray examination previously had revealed an average of only four millimeters of symphysial separation. Six cases of occiput posterior position were observed in the series of forty-four without separation. In only two of these did rotation take place spontaneously, manual aid being required in the remaining four. In all cases in which there was X-ray evidence of pubic widening greater than three millimeters the labor was shorter than in the forty-four in which there was no demonstrable widening. Separation of the sacroiliac joints was noted in twenty-one women, but no correlation was noted between this condition and the course of labor. Post-partum sequelae were found in cases of sacroiliac diastasis, but no subjective or objective symptoms were observed in cases of separation of the symphysis pubis.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

The Use of Strong Solutions of Zinc Sulfate in Morax-Axenfeld Conjunctivitis. L. D. Mitzkewitz. Archives of Ophthalmology, October, 1938.

Mitzkewitz used from a three to five per cent solution of zinc sulfate in the treatment of chronic and fresh angular conjunctivitis caused by the diplobacillus of Morax and Axenfeld. From four to six swabbings of the conjunctiva, without irrigation of the conjunctival sac, were sufficient to cause the subjective symptoms, the redness of the angle, and maceration of the skin of the lids to abate. Instillation of one drop of cocaine hydrochloride prevented the burning sensation caused by the zinc sulfate. This treatment was also effective in cases of trachoma.

The bacterioscopic examination showed no parallelism between the clinical picture of the disease and the number of the bacilli present, so that zinc sulfate evidently possesses a neutralizing property toward the toxins of the microorganism.

PEDIATRICS

By John M. Lee, M.D.
Doctors Building, Nashville

Sulfanilamide Excretion in Human Breast Milk and the Effect on Breast-Fed Babies. H. L. Stewart, Jr., M.D., and J. P. Pratt, M.D. The Journal of the American Medical Association, 111: 1456, October 15, 1938.

Concentrations of sulfanilamide in the cerebrospinal fluid, pleural effusions, digestive juices, ascitic fluid, and prostatic fluid are only slightly lower than in the blood stream. It has been shown in dogs that the drug is present in all body tissues in approximately equal value with the exception of bone and fat.

The authors studied twenty-eight normal convalescent mothers during the first eight post-partum days. They were secreting adequate milk for their babies. Ten mothers were given five grains of sulfanilamide every four hours, thirty grains per day, and eighteen mothers were given ten grains of the drug every four hours, or sixty grains per day.

In both groups the concentration of free sulfanilamide in the breast milk closely paralleled the concentration of the drug in the blood. Mothers who secreted 400 cubic centimeters of milk per day excreted approximately eight to sixteen milligrams of the drug in twenty-four hours on a dosage of thirty grains per day, while the mother taking sixty grains of the drug per day excreted, it is estimated, sixteen to twenty-eight milligrams per day. It was found that when oral administration of sulfanilamide was discontinued milk concentrations of the drug fell rapidly, just as is the case with blood concentrations.

Nursing babies whose mothers received sixty grains of the drug per day showed an excretion of from one to 2.6 milligrams in the urine over a twenty-four hour period.

In this study the babies showed no toxic or other effect from administering the drug to the mothers, and it is felt that the amount of the drug received by the babies is so small that therapy by way of the breast milk is not logical. Some of the mothers in this series showed varying degrees of cyanosis and mild toxic symptoms, but none showed any of the severe reactions.

Six women were given five grains of sulfanilamide every four hours throughout labor. Specimens obtained at the time of delivery showed that the cord blood and the amniotic fluid contained the drug in amounts closely paralleling the maternal blood concentrations.

ROENTGENOLOGY

By Franklin B. Bogart, M.D.
Medical Arts Building, Chattanooga

Radiation Treatment of Herpes Simplex. Wendell C. Hall. Am. J. R. & R. T., Vol. 39, No. 3, p. 393, March, 1938.

Herpes simplex, commonly known as a cold sore or fever blister, causes the average person little concern. In the exceptional case, they may recur frequently and be very painful. In such instances any treatment that offers relief from the symptoms and materially reduces the duration of the disease is welcome by the patient.

Since radiation has been successfully used in other inflammatory lesions, one would expect that good results could be obtained, and in the author's series this expectation has been fulfilled.

Twenty-one lesions have been treated in fifteen cases; ten of them during the eighteen months preceding the writing of the article. The earlier the lesion was treated the better the result. Even in lesions forty-eight hours old, the treatment tended to hasten drying of the vesicles and to shorten the course of the affliction. In most early cases the tingling sensation disappeared in three hours and occasionally earlier, and the inflammatory reaction disappeared in six to eight hours. In three of the cases the results were not this striking, but in these cases, the course of the disease was considerably shortened.

When the first cases were treated X-ray was administered to the cervical nerve roots, as well as to the local lesion. In recent cases, only the local lesion has been treated since treatment of the cervical roots is anatomically illogical, the motor and sensory nerve supply of the lips being derived from the cranial nerves and not the cervical nerve roots.

Over half of the cases received 375 r in a single dose, generated at 130 kilovolts, five milliamperes, thirty centimeters distance, and no filter. In several cases as little as 125 r was given, but the results were less striking. A liberal amount of skin was included in the treated area. In a few cases one millimeter aluminum filter was used with the same results.

SURGERY—GENERAL AND ABDOMINAL

By BATTLE MALONE, II, M.D.
1400 Monroe Avenue, Memphis

Management of Head Injuries J. Grafton Love, M.D. Surg. Clin., N. Am., August, 1938.

BIRTH INJURIES OF THE HEAD

Caput succedaneum and subperiosteal hemorrhage must be differentiated. The latter is confined to the limits of one cranial bone and may be aspirated if it does not disappear. The former usually disappears more quickly. Overriding of the cranial bones corrects itself. Linear fractures of the cranial bones without other symptoms require no special treatment, whereas, depressed fractures, if resulting in motor paralysis or convulsions, should be elevated. Subarachnoid hemorrhage usually requires no special treatment, but drainage by means of spinal puncture is done if meningismus or convulsions are present.

HEAD INJURIES IN YOUTH AND ADULTS

Careful examinations of the head should be made for lacerations. If any are found, the surrounding hair is shaved, the area well washed and the antiseptic applied, and the area anesthetized with one per cent procaine hydrochloride. The wound should be explored for foreign bodies and the skull in this region inspected for fractures. This is followed by debridement and suture without drainage. Tetanus antitoxin should be given in most cases. Concussion of the brain is accompanied by only a short period of unconsciousness. No specific treatment is necessary if consciousness has returned when the physician first sees the patient. Any patient who has been unconscious even for a short period of time should be kept under close observation for twenty-four hours because of the possibility of delayed intracranial hemorrhage.

Contusion of the brain produces more evidence of brain damage. Unconsciousness is more prolonged and after consciousness returns the patient may remain semistuporous and there may be hemiparesis or hemiplegia. Fractures of the skull may not be present, but lumbar puncture often reveals red blood cells in the spinal fluid. These patients should be kept in bed until headache, vomiting, and all evidences of cerebral irritation have disappeared. Fluid intake is limited to 1,500 cubic centimeters in twenty-four hours and magnesium sulphate given through a nasal tube if the patient is unconscious to produce dehydration. If delirium is present, this should be controlled by barbiturates rather than opiates or forceful restraint. Daily lumbar punctures should be done if blood is present in the spinal fluid or the pressure is increased.

Laceration of the brain is frequently associated with a depressed fracture of the skull. In the presence of signs indicative of localized injury to the brain subsequent to head trauma, exploration of that region should be performed if these signs are progressive. Bleeding points in the brain should be controlled with silver clips, if available, to the larger vessels and electrocoagulation for smaller bleeding points. Badly contused edges of lacerations should be resected before closing the cranium.

Uncomplicated linear fractures of the skull require no special treatment. Uncomplicated cases should be kept in bed for at least one week. When the fractures involve the paranasal sinuses, the patient is warned against blowing the nose. Here lumbar puncture is contraindicated. If the middle meningeal artery is involved in the fracture, prompt operative treatment is required to check hemorrhage and prevent extradural hematoma. Basal fractures are usually linear and are extremely serious because of the important intracranial structures which may be damaged. If the ear is involved with rupture of the tympanic membrane, conservative treatment is required and swabbing or irrigation of the canal is contraindicated. Depressed fractures require operative elevation as soon as the patient's general condition will permit. A blood transfusion is helpful in reducing shock. The fragments may or may not be replaced. In compound fractures of the vault extreme care is used in cleansing and preparing the wound and the area around it. Local anesthesia should be used and all devitalized tissue removed.

Conservative treatment is emphasized throughout.

UROLOGY

By TOM R. BARRY, M.D., F.A.C.S.
By G. A. WILLIAMSON, JR., M.D
Medical Building, Knoxville

Urologic Conditions Simulating Chronic Glomerulonephritis. A. J. Scholl, M.D. Journal of the American Medical Association, Vol. 11, No. 16, October 15, 1938.

Certain curable diseases of the urinary tract may simulate chronic glomerulonephritis. Especially is this true of chronic obstructive lesions. Uremia is a symptom of chronic glomerulonephritis, but it also may occur in any disease or injury whereby so much of the renal tissue is destroyed that the remaining tissue is unable to compensate.

The urologist, considering uremia, thinks of the retention of nitrogen in the blood associated with obstructive lesions. He attempts to establish drainage, relieve infection, and considers the prognosis not unfavorable. The internist, considering uremia, thinks of chronic glomerulonephritis with a rapidly fatal outcome in cases with a high nitrogen retention.

Patients with obstructive lesions may have a blood urea of eighty to 100 milligrams per 100

(Continued on page 466)

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- Dr. E. C. Ellett, Memphis; West Tennessee.

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Hamblen	R. A. Purvis, Morristown	D. J. Zimmerman, Morristown	D. R. Roach, Morristown
Hamilton	A. M. Patterson, Chattanooga	S. H. Long, Chattanooga	J. Marsh Frere, Chattanooga
Hardin, Lawrence, Lewis, Perry, Wayne	J. T. Keeton, Clifton	Henry N. Moore, Savannah (Hardin) Leo Harris, Lawrenceburg (Lawrence) Paul Wiley, Hohenwald (Lewis) W. E. Turner, Lobelville (Perry) D. L. Woods, Waynesboro (Wayne)	O. H. Williams, Savannah
Haywood	R. T. Keeton, Brownsville	G. G. Mulherin, Brownsville	Roy M. Lanier, Brownsville
Henry	A. F. Paschall, Puryear	Elroy Scruggs, Paris	R. Graham Fish, Paris
Hickman	Margaretta Bowers, Wrigley	E. C. Mulliniks, Centerville	W. K. Edwards, Centerville
Jackson			E. W. Draper, Gainesboro
Knox	Robt. F. Patterson, Knoxville	R. G. Waterhouse, Knoxville	Jesse C. Hill, Knoxville
Lauderdale	Joe B. Lacke , Ripley		Jas. L. Dunavant, Ripley
Lincoln	R. T. Odom, Fayetteville	W. S. Joplin, Petersburg	R. E. McCown, Fayetteville
Loudon	J. A. Leeper, Lenoir City	J. T. Mourfield, Lenoir City	J. R. Watkins, Loudon
Macon	D. D. Howser, Lafayette		J. Y. Freeman, Lafayette
Madison	Glenn D. Batten, Jackson	William K. Sullivan, Jackson	S. M. Herron, Jackson
Maury	Leon Ward, Mt. Pleasant	H. O. Anderson, Mt. Pleasant	D. B. Andrews, Columbia
McMinn	Boyd McClary, Etowah	C. O. Foree, Athens	D. F. Seay, Englewood
McNairy	E. M. Smith, Selmer	J. R. Smith, Selmer	T. N. Humphrey, Selmer
Monroe	R. C. Kimbrough, Madisonville		
Montgomery	M. L. Shelby, Clarksville	Philip L. Lyle, Clarksville	V. H. Griffin, Clarksville
Obion	F. B. Kimzey, Union City		D. S. Latimer, Union City
Overton	W. M. Breeding, Livingston		A. B. Qualls, Livingston
Polk	Thos. J. Hicks, Copperhill	W. Y. Gilliam, Copperhill	F. O. Geisler, Isabella
Putnam	R. L. Witherington, Cookeville	T. M. Crain, Monterey	Thurman Shipley, Cookeville
Roane	O. H. Coleman, Kingston	F. A. Neergaard, Harriman	J. C. Fly, Kingston
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Rutherford	John F. Cason, Murfreesboro	R. C. Van Hook, Auburntown	J. A. Scott, Murfreesboro
Scott	D. T. Chambers, Norma	T. L. Phillips, Oneida	Milford Thompson, Oneida
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Sullivan, Johnson	L. C. Cox, Kingsport	T. R. Bowers, Bristol (Sullivan) E. Bruce Rhea, Shouns (Johnson)	C. F. N. Schram, Kingsport
Sumner	C. D. Robbins, Gallatin	C. H. Donoho, Portland	W. M. Dedman, Gallatin
Tipton	A. J. Roby, Covington	J. J. Fleming, Atoka	H. C. Currie, Covington
Unicoi	H. L. Monroe, Erwin	R. H. Harvey, Erwin	J. J. Wright, Erwin
*Warren	John S. Harris, McMinnville	E. L. Mooneyham, Rock Island	John T. Mason, McMinnville
Washington	H. B. Cupp, Mountain Home	Walter Hankins, Johnson City	Carroll H. Long, Johnson City
Weakley	J. A. Moore, Sharon	M. D. Ingram, Dresden	T. B. Wingo, Martin
White	C. E. Tubb, Sparta		A. F. Richards, Sparta
Williamson	W. F. Roth, Jr., Franklin	B. T. Nolen, Franklin	K. S. Howlett, Franklin
Wilson	J. S. Campbell, Lebanon	R. N. Buchanan, Jr., Lebanon	R. B. Gaston, Lebanon

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* 1937 Officers.

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Dr. A. M. Patterson, Chattanooga (1940)
Dr. A. H. Lancaster, Knoxville (1939)

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Dr. C. M. Oberschmidt, Memphis (1939)
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Dr. S. J. Sullivan, Cleveland (1940)

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Dr. H. B. Everett, Memphis (1941)
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Dr. H. H. Shoulders, *ex-officio*, Nashville

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Dr. J. O. Manier, Nashville (1943)

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Dr. C. M. Hamilton, Nashville (1939)

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Dr. H. M. Tigert, Nashville (1939)

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Dr. H. B. Gotten, Memphis (1941)
Dr. W. O. Baird, Henderson (1939)
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Dr. E. L. Ellis, Maryville (1940)
Dr. L. J. Lindsey, Covington (1940)
Dr. B. T. Nolen, Franklin (1939)

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Dr. H. P. Hewitt, Chattanooga (1941)
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Dr. C. H. Heacock, Memphis (1941)

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Dr. A. R. McMahan, Memphis (1939)

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Dr. H. G. Hill, Memphis (1939)
Dr. Jarrell Penn, Knoxville (1940)

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- Dr. H. C. Long, Knoxville
- Dr. H. B. Everett, Memphis

Committee on Postgraduate Instruction in Obstetrics—
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- Dr. Franklin B. Bogart, Chattanooga
- Dr. O. W. Hyman, Memphis
- Dr. John M. Lee, Nashville
- Dr. J. O. Manier, Nashville
- Dr. W. L. Williamson, Memphis
- Dr. John B. Youmans, Nashville

cubic centimeters or more and a creatinine of eight to ten milligrams per 100 cubic centimeters and recover after drainage. Patients with chronic nephritis with a creatinine of five milligrams per 100 cubic centimeters of blood or above will have a fatal termination.

Uremia associated with chronic glomerulonephritis is usually characterized by sudden convulsive seizures, while the uremia associated with obstructive lesions is more of a stuporous type, in which patients rarely have convulsions.

Pyelonephritis frequently resembles and is commonly confused with chronic glomerulonephritis, and is usually bilateral. In the early stages the symptoms are usually mild, and the disease is commonly associated with obstructive lesions. Exacerbations are frequent. The blood pressure is usually normal in the early stages of pyelonephritis, but may become elevated when the disease becomes chronic. Albuminuric retinitis, which is common in glomerulonephritis, does not occur in pyelonephritis. The urine in pyelonephritis usually shows bacteria, albumin, white blood cells, a few red blood cells, and usually no casts. In glomerulonephritis, casts are always present. In pyelonephritis, the blood shows an elevated leucocyte count. The diagnosis is frequently made by cystoscopic examination.

In obstruction of the urinary tract with an associated anuria, the early symptoms are usually mild in contrast to the severity of those of glomerulonephritis with anuria.

In polycystic renal disease, the urinary findings and hypertension are frequently similar to those of nephritis. Albuminuric retinitis is not present. The patient may have a marked elevation of blood nitrogen for years with very few symptoms. The presence of tumors in the renal areas may be felt.

In certain cases of hyperparathyroidism, the clinical picture is similar to that of glomerulonephritis. Acute symptoms may develop, and the patient die with anuria. The scarcity of casts in the urinary sediment is a helpful differential point.

One must remember that any of these conditions may be superimposed upon a chronic nephritis, which will make the diagnosis more confusing.

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THE JOURNAL

OF THE

TENNESSEE STATE MEDICAL ASSOCIATION

DEVOTED TO THE INTERESTS OF THE MEDICAL PROFESSION OF TENNESSEE

ISSUED MONTHLY, Under Direction of the Trustees

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H. H. SHOULDERS, M.D., Secretary and Editor **W. M. HARDY, M.D., Asst. Secretary-Editor**

OFFICE OF PUBLICATION, 508 DOCTORS BUILDING, NASHVILLE, TENNESSEE

Volume XXXI December, 1938 No. 12

PROCEEDINGS OF THE HOUSE OF DELEGATES, ONE HUNDRED FIFTH ANNUAL SESSION, TENNESSEE STATE MEDICAL ASSOCIATION, NOEL HOTEL, NASHVILLE, TENNESSEE

APRIL 12, 13, 14, 1938

TUESDAY AFTERNOON MEETING

The first meeting of the House of Delegates of the Tennessee State Medical Association, held in connection with the One Hundred Fifth Annual Session of the association, at the Noel Hotel, Nashville, Tennessee, April 12-14, 1938, convened at two forty-five o'clock, Dr. E. R. Zemp, Knoxville, Speaker of the House of Delegates, presiding.

SPEAKER ZEMP: The first order of business is the roll call.

The secretary called the roll of the delegates whose certificates reached the office in time to be included.

DELEGATES TO TENNESSEE STATE MEDICAL ASSOCIATION

Delegate	*Alternate*
Anderson	
H. D. Hicks, Clinton	*O. E. Ballou, Clinton*
Bedford	
H. H. Shull, Shelbyville	*S. S. Moody, Shelbyville*
Blount	
J. A. McCulloch, Maryville	*G. D. LeQuire, Maryville*
Bradley	
Wm. A. Garrott, Cleveland	*H. J. McAlister, Cleveland*
Campbell	
S. S. Brown, Jellico	*J. L. Heffernan, Jellico*
Carroll	
R. A. Douglas, Huntingdon	
Carter	
J. B. Shoun, Elizabethton	*W. G. Frost, Elizabethton*
Chester, Henderson, Decatur	
W. O. Baird, Henderson	*G. H. Brandon, Lexington*
Cocke	
E. E. Northcutt, Newport	*L. S. Nease, Newport*
Cumberland	
V. O. Buttram, Crossville	*W. S. Dooley, Crossville*
Davidson	
O. N. Bryan	*S. J. Fentress*
D. W. Hailey	*W. W. Hubbard*
Theo Morford	*C. S. McMurray*
N. S. Shofner	*E. M. Regen*
D. W. Smith	*W. O. Tirril, Jr.*
Dickson	
L. F. Loggins, Charlotte	*R. P. Beasley, Dickson*
Dyer, Lake, Crockett	
J. D. Brewer (Dyer), Dyersburg	*J. Paul Baird, Dyersburg*
W. L. Sumners (Lake), Ridgely	*J. P. Moon, Tiptonville*
W. H. Stallings (Crockett) Friendship	*J. O. McKinney, Friendship*
Fayette-Hardeman	
F. K. West, Rossville	*Wiley D. Lewis, Bolivar*
Fentress	
Franklin	
John M. Hardy, Sewanee	*H. T. Kirby-Smith, Winchester*
Gibson	
John Jackson, Dyer	*E. P. Bowerman, Trenton*
Giles	
J. B. Wright, Lynnville	*T. F. Booth, Pulaski*
Greene	
L. E. Dyer	
Grundy	
O. H. Clements, Palmer	*T. F. Taylor, Monteagle*
Hamblen	
W. E. Howell, Morristown	*L. W. Nabers, Morristown*
Hamilton	
A. M. Patterson	*J. C. Brooks*
J. B. Swafford	*J. B. Haskins*
Frank Harris	*S. H. Long*
Hardin, Lawrence, Lewis, Perry, Wayne	
T. J. Stockard, Lawrenceburg	*Paul Wiley, Hohenwald*
Haywood	
Roy M. Lanier, Brownsville	*G. G. Mulherin, Brownsville*
Henry	
	A. A. Oliver, Paris
Hickman	
C. G. Bowers, Wrigley	*J. S. Beasley, Centerville*
Jackson	
R. C. Gaw, Gainesboro	
Knox	
M. S. Roberts	*Ralph Monger*
E. A. Guynes	*J. L. Raulston*
Kyle Copenhaver	*H. J. Bolin*
A. H. Lancaster	*H. T. McClain*
Lauderdale	
J. R. Lewis, Ripley	*J. H. Nunn, Ripley*
Lincoln	
Loudon	
Macon	
A. Y. Kirby, Lafayette	*H. C. Hesson, Red Boiling Springs*
Madison	
Jas. W. McClaran, Jackson	*Chas. F. Webb, Jackson*
Maury	
D. B. Andrews, Columbia	*L. E. Ragsdale, Williamsport*
McMinn	
S. Boyd McClary, Jr., Etowah	*W. E. Foree, Athens*
McNairy	
E. M. Smith, Selmer	*J. R. Smith, Selmer*
Monroe	
R. C. Kimbrough, Madisonville	*D. M. Cowgill, Madisonville*
Montgomery	
V. H. Griffin, Clarksville	*M. L. Shelby, Clarksville*
Obion	
Overton	
W. M. Brown, Livingston	*H. B. Nivens, Livingston*

Polk
F. O. Geisler, Isabella----------*Thos. J. Hicks, Copperhill*
Putnam
Thurman Shipley, Cookeville----------*W. A. Howard, Cookeville*
Roane
T. H. Phillips, Rockwood----------*F. D. Owings, Rockwood*
Robertson
John S. Freeman, Springfield----------*W. S. Rude, Ridgetop*
Rutherford
V. S. Campbell, Murfreesboro----------*J. R. Gott, Murfreesboro*
Scott
Sevier
C. E. Erwin, Sevierville----------*J. A. Conroy, Gatlinburg*
Shelby
E. G. Kelly----------*J. P. Carter*
J. B. Stanford----------*J. J. Hobson*
J. R. Reinberger----------*C. D. Allen*
W. D. Mims----------*H. W. Qualls*
Webb Key----------*E. W. Cocke*
B. F. Hardin----------*H. W. Priddy*
J. H. Francis----------*Neumon Taylor*
Smith
R. E. Key, Carthage----------*Lillard Sloan, Carthage*
Sullivan-Johnson
L. C. Cox, Kingsport----------*W. K. Vance, Bristol*
C. F. N. Schram, Kingsport----------*William Gammon, Bristol*
Sumner
J. J. Gwin, Hartsville----------*W. N. Lackey, Gallatin*
Tipton
John M. Parrish, Jr., Covington----------
Unicoi
H. L. Monroe, Erwin---------- *R. H. Harvey, Erwin*
Warren
Washington
W. M. Bevis, Mountain Home----------*E. T. West, Johnson City*
Weakley
M. H. Buckley, Martin----------*T. W. Jones, Martin*
White
J. C. Blankenship, Sparta----------*S. E. Gaines, Sparta*
Williamson
J. O. Walker, Franklin----------
Wilson
F. B. Dunklin, Lebanon----------*J. L. Ames, Lebanon*

Speaker Zemp ruled that the roll as called, together with ex-presidents and officers of the association, constitute the roll of the house.

Speaker Zemp then appointed reference committees as follows:

REFERENCE COMMITTEES

Committee on Reports of Officers—Dr. T. R. Ray, Shelbyville, Chairman; Dr. E. G. Kelly, Memphis; Dr. J. C. Brooks, Chattanooga; Dr. W. O. Baird, Henderson; Dr. Joe Wright, Lynnville.

Committee on Reports of Committees—Dr. H. B. Everett, Chairman, Memphis; Dr. D. W. Smith, Nashville; Dr. J. T. Moore, Algood; Dr. Frank Harris, Chattanooga; Dr. W. L. Williamson, Memphis.

Committee on Resolutions—Dr. N. S. Shoffner, Chairman, Nashville; Dr. W. B. Burns, Memphis; Dr. L. E. Dyer, Greeneville; Dr. J. D. Brewer, Dyersburg; Dr. V. H. Griffin, Clarksville.

Committee on Amendment to Constitution and By-Laws—Dr. J. O. Manier, Chairman, Nashville; Dr. R. C. Gaw, Gainesboro; Dr. E. T. Newell, Chattanooga.

Grievance Committee—Dr. W. P. Wood, Chairman, Knoxville; Dr. Jack Thompson, Jackson; Dr. J. B. Stanford, Memphis; Dr. John Freeman, Springfield; Dr. H. A. Laws, Chattanooga.

Certificates of election of several delegates which reached the office too late to be included in the first roll call were handed to the Credentials Committee.

NOMINATING COMMITTEE

A three-minute recess was ordered by the Speaker for the formation of the Nominating Committee.

The meeting was called to order and the Committee on Nominations was announced as follows: Dr. H. A. Laws, Chairman, Hamilton County; Dr. A. H. Lancaster, Knox County; Dr. O. E. Ballou, Anderson County; Dr. O. N. Bryan, Davidson County; Dr. T. R. Ray, Bedford County; Dr. V. H. Griffin, Montgomery County; Dr. E. G. Kelly, Shelby County; Dr. Roy M. Lanier, Haywood County; Dr. J. D. Brewer, Dyer County.

REPORT OF CREDENTIALS COMMITTEE

Dr. Kyle Copenhaver, chairman of the Credential Committee, reported that his committee recommended the seating of delegates as certified on the roll called by Secretary Shoulders and in addition thereto that Dr. F. B. Kingsley or Dr. M. A. Blanton, his alternate, be seated from Obion County; that Dr. L. S. Nease, alternate, be seated in the absence of Dr. Northcutt. In the absence of both delegate and alternate for Greene County, Dr. L. E. Dyer was seated as delegate.

Motion carried to accept the report of the Credentials Committee.

The speaker called for the reports of the treasurer and chairman of the Board of Trustees.

Dr. C. M. Hamilton submitted the Treasurer's Report.

REPORT OF AUDIT FOR YEAR ENDED DECEMBER 31, 1937

To the Chairman and Board of Directors, Tennessee State Medical Association,
Nashville, Tennessee.

Sirs:

We have audited the cash receipts and disbursement records of the Tennessee State Medical Association for the year ended December 31, 1937.

The results of our examination are presented in the accompanying comments on audit and on the exhibit and schedules designated as follows:

Exhibit "A"—Statement of Receipts and Disbursements for the Year Ended December 31, 1937.
Schedule A-1—Cash in Banks.
Schedule A-2—Statement of Receipts by Months for the Year Ended December 31, 1937.
Schedule A-3—Statement of General Fund for the Year Ended December 31, 1937.
Schedule A-4—Investments at December 31, 1937.

Comments on Audit

Cash in banks, $3,672.75, was represented by the cash on deposit at December 31, 1937, with the American National Bank, Nashville, Tennessee, $3,278.06, and the Third National Bank, Nashville, Tennessee, $394.69, as shown by the reconciliations presented on Schedule A-1.

Cash receipts appearing on the receipts register were traced into the depositories.

Cash disbursements were verified by examination of canceled checks as to signatures and endorsements and by comparing the amounts and payees shown thereon with the entries in the record of cash disbursements. A detailed analysis of disbursements is shown on Schedule A-3.

Investments, $12,321. The association owned on December 31, 1937, first mortgage real estate notes in the principal amount of $8,200 and Home Owners Loan Corporation bonds of par value of $4,000, cost value $4,121. The securities were examined by our representative on March 24, 1938. On Schedule A-4 a complete description of the notes and bonds is shown. For the purpose of record the bonds are shown at cost, $4,121. We were informed by Mr. W. L. Whitaker of the First Mortgage Company that the note of W. G. Farrar in the amount of $2,000 due December 1, 1937, was paid in January, 1938.

General

Fire insurance on office furniture and fixtures in the amount of $500 and fidelity bonds on the treasurer, Dr. Charles Marshall Hamilton, were in effect on December 31, 1937.

As the records are kept on the cash receipts and disbursements basis, we have not attempted to prepare a schedule of assets and liabilities at December 31, 1937. However, it is deemed proper to mention that at December 31, 1937, the cost of the December JOURNAL in the amount of $399 was unpaid. This item, together with other bills of more or less nominal amounts covering 1937 expenditures, was paid in January, 1938.

Respectfully submitted,
OSBORN & DUNCAN.
By W. M. DUNCAN.
Certified Public Accountant.

March 29, 1938.

1938

RECEIPTS

	Dues	*Interest Investment*	*Adv.*	*Misc.*	*Total*
January	$2,910.00		$ 317.13	$ 59.20	$3,286.63
February	2,334.00		380.43	42.20	2,756 63
March	1,584.00		489.52	83.00	2,156.52
Total	$6,828.00		$1,187.08	$184.70	$8,199.78

DISBURSEMENTS

	Med. Ed. Committee	*Expense*	*Misc.*	*Journal Expense*	*Total*
January	$ 37.20	$ 613.33	$61.84	$ 701.00	$1,413.37
February	304.69	548.60			853 29
March		611.26	20.00	302.00	933.26
Total	$341.89	$1,773.19	$81.84	$1,003.00	$3,199.92

Balance as of December 31, 1937		$3,672.75
Receipts	$8,199.78	
Disbursements	3,199.92	
Excess of Receipts over Disbursements		4,999.86
Balance as of March 31, 1938		$8,672.61

EXHIBIT "A"

Statement of Receipts and Disbursements for the Year Ended December 31, 1937

RECEIPTS			
Dues	$10,674.00		
Interest from Investments	436.66		
Principal from Investments	250.00*		
Advertising	4,717.80		
Exhibit Space at Convention	520.00		
Miscellaneous	183.05		
Total Receipts Schedule A-3		$16,781.51	
DISBURSEMENTS			
Medical Journal, Schedule A-3	$ 4,478.11		
Convention Expense, Schedule A-3	965 09		
Salaries, Schedule A-3	5,710.00		
Legislative Committee, Schedule A-3	332.25		
Liaison Committee, Schedule A-3	43.85		
Medical Defense, Schedule A-3	40.50		
Board of Trustees, Schedule A-3	43.05		
Educational Committee, Schedule A-3	1,528.00		
Office Fixtures, Schedule A-3	135.55		
General Expense and Other Disbursements	1,636.67		
Total Disbursements		$14,913.07	
Excess of Receipts Over Disbursements			$1,868.44
Represented by:			
General Fund Balance, 12-31-36		$ 1,804.31	
General Fund Balance, 12-31-37, Schedule A-1		3,672.75	
Increase in Bank Balance, Year Ended December 31, 1937			$1,868.44

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*Principal from Mortgage Notes Held by First Mortgage Company.

SCHEDULE A-1

Cash in Banks December 31, 1937

Balance, American National Bank, January 1, 1937	$3,294.06	
Less Outstanding Check, 12-17-37, W. P. Wood	16.00	
Balance Per Books, 12-31-37		$3,278.06
Balance, Third National Bank, 12-31-37		394.69
Balance in Banks, 12-31-37, Exhibit "A"		$3,672.75

SCHEDULE A-2

Statement of Receipts by Months for the Year Ended December 31, 1937

Month	*Total*	*Dues*	*Interest on Investments*	*Principal on Investments*	*Advertising*	*Exhibit Space*	*Miscellaneous*
Jan.	$ 3,405.75	$ 2,970			$ 417.75		$ 18.00
Feb.	2,935 45	2,646			289.45		
March	2,656.97	2,160	41.25		368.72	80	7.00
April	1,103.88	390			320 03	360	33.85
May	600.49	246	15.00		297.49	40	2.00
June	1,316.72	456	108.75	125.00	578.97	40	8.00
July	518.92	120			381.42		17.50
Aug.	381.77	84			291.77		6.00
Sept.	334.79	60			258.79		16.00
Oct.	545.68	84			452.68		9.00
Nov.	655.93	30	180.22	82.50	320.41		42.80
Dec.	2,325.16	1,428	91.44	42.50	740.32		22.90
Totals	$16,781.51	$10,674	$436.66	$250.00	$4,717.80	$520	$183.05

SCHEDULE A-3

Statement of General Funds for the Year Ended December 31, 1937

Balance, January 1, 1937		$ 1,804.31	
RECEIPTS			
Dues	$10,674.00		
Interest from Investments	436.66		
Principal from Investments	250.00		
Advertising	4,717.80		
Exhibit Space in Journal	520 00		
Miscellaneous	183.05		
Total Receipts, Exhibit "A"		$16,781.51	
Balance			$18,585.82
DISBURSEMENTS			
Medical Journal:			
Printing	$ 3,375.00		
Extra Copies	259.25		
Half Tones and Cuts	245.00		
Zincs	11.25		
Roster	30.00		
Copyright	26.00		
Mailing and Postage	317 59		
Inserts	37.50		
Tabular Matter and Index	176.00		
Delivery Charge	.52		
Total		$ 4,478.11	
Convention Expense:			
Reporting Service	$ 435.47		
Badges	41.08		
Travel Expense	467.74		
Hotel Diagrams	5.00		
Signs	15 80		
Total		$ 965.09	
Salaries:			
Dr. C. M. Hamilton	$ 100.00		
Dr. H. H. Shoulders	1,500 00		
Dr. William Hardy	1,800.00		
Miss Willard Batey	1,500.00		
Mrs. Ethel Harrison	810.00		
Total		$ 5,710.00	
Legislative Committee:			
Luncheon	$ 8.00		
Travel Expense	7.50		
Tennessee Legislative Committee	66.75		
Charles L. Cornelius Honorarium	250.00		
Total		$ 332.25	
Liaison Committee:			
Travel Expense	$ 43.85		
Total		$ 43.85	
Medical Defense:			
Attorney Fee	$ 30.00		
Clerical	7 50		
Postage	3.00		
Total		$ 40.50	
Board of Trustees:			
Travel Expense	$ 36.05		
Dinner for Members and Guests	7.00		
Total		$ 43.05	
Educational Committee:			
Postgraduate Instruction	$ 1,500.00		
Travel	28.00		
Total		$ 1,528.00	
Office Fixtures:			
Typewriter	$ 89 10		
File	46.45		
Total		$ 135.55	
General Expense and Other Disbursements:			
Rent	$ 513.60		
Telephone	161.00		
Lights	17.25		
Towel Service	13.00		
Office Supplies and Printing	90.02		
Postage	185 00		
Refund	15.00		
Bond Premium	25.00		
Supplies, Programs, Constitution, and By-Laws	384.50		
Checks Returned	13.00		
Typewriter Repairs	14.04		
Rent on Safety Deposit Box	3.30		
Reprints Dr. Heydt's Paper	31.16		
Binding Two Journals	5.00		
Letter Service	46.50		
Janitor Service	4.00		
Social Security Tax	50.30		
Audit	65.00		
Total		$ 1,636.67	
Total Disbursements			$14,913.07
Balance in General Fund, 12-31-37			$ 3,672.75

SCHEDULE A-4

Investments December 31, 1937

First Mortgage Real Estate Notes (A)

Maker	*Dated*	*Due*	*Ext'd to*	*Bal. 12-31-36*	*Paym'ts 1937*	*Bal. 12-31-37*
J. H. Horn	6-1-29	6-1-32	6-1-40	$1,950		$1,950
General Securities Co.	4-1-36	5-1-41		1,400		1,400
Louise Shields	9-1-36	10-1-46		1,500	$100	1,400
A. D. Talley	7-1-36	4-1-41		1,600	150	1,450
W. G. Farrar	6-1-29	12-1-37*		2,000		2,000
Total First Mortgage Real Estate Notes						$8,200

*Paid in January, 1938.

Bonds (B)

No.	*Due*	*Int. Rate*	*Int. Due Dates*	*Par Value*	*Cost*
H.O.L C.--M730418 J	8-1-49	2¾%	2-1- 8-1	$1,000	$ 3,090
H.O.L.C.--M641829 K	8-1-49	2¾%	2-1- 8-1	1,000	
H.O.L C.--M641830 L	8-1-49	2¾%	2-1- 8-1	1,000	
H.O.L.C.--AT253921 A	5-1-52	3%	5-1-11-1	100	1,031
H.O.L C.--AT225451 A	5-1-52	3%	5-1-11-1	100	
H.O.L.C.--AT228344 D	5-1-52	3%	5-1-11-1	100	
H.O.L.C.--AT228345 E	5-1-52	3%	5-1-11-1	100	
H.O.L.C.--AT228346 F	5-1-52	3%	5-1-11-1	100	
H.O.L.C.--AT244107 H	5-1-52	3%	5-1-11-1	100	
H.O.L.C.--AT206058 J	5-1-52	3%	5-1-11-1	100	
H.O.L.C.--AT244108 J	5-1-52	3%	5-1-11-1	100	
H.O.L.C.--AT244109 K	5-1-52	3%	5-1-11-1	100	
H.O.L.C.--AT244110 L	5-1-52	3%	5-1-11-1	100	
Toal Bonds					$ 4,121
Total Investments					$12,321

(A) At First Mortgage Company.

(B) In Safety Deposit Box at Church Street Branch of Broadway National Bank.

The report was referred to Committee on Reports of Officers.

Dr. Hamilton read the report of the Board of Trustees.

REPORT OF THE CHAIRMAN OF BOARD OF TRUSTEES

The Board of Trustees of the State Medical Association held regular semiannual meetings April 15, 1937, at the Andrew Johnson Hotel, Knoxville, Tennessee, and November 14, 1937, in headquarter's office, Nashville, Tennessee. A special meeting was called for December 19, 1937, at the headquarter's office. Absence of a quorum prevented a meeting of the trustees. Nevertheless an informal discussion was held by visitors and those present.

At the meeting April 15, 1937, those present were: C. M. Hamilton, chairman; A. F. Cooper, E. R. Zemp, Franklin B. Bogart, W. L. Williamson, and H. H. Shoulders. The usual business routine included appropriation of an honorarium of $250 to Mr. Charles Cornelius for legal services, and the agreement to pay the expenses of Dr. Shoulders incurred in the attendance of annual meetings. Secretary Shoulders was directed to ascertain the expense accounts of various guest speakers in order that they might be paid. It was considered expedient to combine the Liaison Committee and the Committee of Public Policy and to have a Committee on Legislation to deal with legislative matters only. It was decided that the number of the members of the various committees should be in accordance with the constitution and by-laws. Since a list of the committee appointments has appeared in each issue of the JOURNAL and in the program, it does not need to be included in this report. Four additional members were added to the Committee on Maternal Welfare at the request of the chairman, Dr. Reinberger.

At the meeting November 14, 1937, the following members were present: C. M. Hamilton, chairman; W. L. Williamson, A. F. Cooper, Franklin B. Bogart, and H. H. Shoulders. James R. Reinberger of Memphis, President George Williamson of Columbia, John M. Lee, J. O. Manier, and W. M. Hardy of Nashville were also in attendance. After the adoption of the minutes of previous meeting, Secretary-Editor H. H. Shoulders made a rather complete report. He reported that the membership had increased almost one hundred in number to a total of 1,639.

Local societies throughout the state were reported to be functioning well and the secretary-editor had used his influence to effect combinations of societies where such a movement would be feasible.

It was shown that the income of the association had increased by $371.72 over the same period of the previous year. On the other hand, the disbursements had increased for the first three quarters of the year by $1,382.30. This was accounted for by additional clerical help and by appropriation to the Medical Education Committee for Postgraduate Instruction. Increase in the volume of correspondence and in extra bookkeeping had made it necessary to employ another clerk. Balance on hand, September 30, 1937, amounted to $3,341.56.

The JOURNAL had been published on time each month. The September issue carried the full minutes of the House of Delegates in session at Knoxville. The secretary-editor had been given authority of deleting much of the discussion that takes place in the House of Delegates, but since a great deal of the discussion was considered of more than the average importance, it was decided to publish it in detail. The JOURNAL had been made available to the colored doctors of the state and a great number of them had taken advantage of this opportunity.

The secretary-editor read a communication from Dr. John P. Peters, secretary of the so-called "Self-Appointed Committee of 430," under the date of November 5, 1937. Certain principles and proposals were submitted for consideration. Since similar principles and proposals had been submitted to the House of Delegates of the American Medical Association in session at the last annual meeting and had been overwhelmingly disapproved and since these principles and proposals did not seem to coincide with the ideals of organized physicians who earn a livelihood by the actual practice of medicine, they were also disapproved by your board. The secretary-editor was instructed to have the various county medical societies to render an expression in regard to the principles and proposals.

Dr. Reinberger, chairman of the Postgraduate Committee, made a few remarks concerning the possibility of future postgraduate work, and Dr. John M. Lee presented a resolution which had been adopted by the Postgraduate Committee which reads as follows:

"*Resolved*, That the Committee on Postgraduate Instruction in Obstetrics urge the House of Delegates of the Tennessee State Medical Association to continue postgraduate instruction in Tennessee in a manner similar to that now being conducted and that the next course of instructions be in pediatrics."

This resolution was approved.

A third meeting was called December 19, 1937, for the purpose of devising a plan whereby clients of the Farm Security Administration might obtain federal aid for medical service.

Dr. Franklin B. Bogart and C. M. Hamilton were the only members present.

It was decided to hold an informal discussion with the following consultants: Dr. R. C. Williams, medical director of the Farm Security Administration; Lionel R. Barrett, district supervisor of Middle Tennessee Farm Security Administration; L. H. Halton, state director, Farm Security Administration; Miss Sue H. Taylor, associate state director, Rural Rehabilitation Division, Farm Security Administration; Drs. John M. Lee, W. C. Dixon, W. M. Hardy, and State Commissioner of Health Dr. W. Carter Williams.

A plan was drafted and sent to each member of the Board of Trustees which met with unanimous approval. A copy of the plan was sent to the secretaries of the various county medical societies and is attached to this report. Your attention will be called to a few of the important features, but it will not be read in detail.

It was proposed that every client be allowed to borrow from fifteen to fifty dollars from the Farm Security Administration, depending upon the needs of the client and upon his ability to repay the loan. Details of handling the transactions and agreements were to be worked out by the local medical societies and the local administrator. The fees should be the same as usually charged for such services. It is understood that the Board of Trustees and officers of the Tennessee State Medical Association do not assume the power of making binding agreements with any agency concerning fee rates for medical services by any physician in the state. None of the societies are obligated to abide by the wishes of the board, nor are all the members of a local society obligated to carry out a plan which the majority membership may adopt. However, it was the desire of the board that the entire profession would enter wholeheartedly into this cooperative effort to rehabilitate these families so that they might become financially independent citizens. It was the opinion that the principles involved in this plan would not violate any of the principles in the medical code of ethics. Therefore, it was recommended for adoption by each and every component society in the state.

Respectfully submitted,
C. M. HAMILTON, Chairman.

The report was referred to Committee on Reports of Officers.

DR. MORGAN'S GRIEVANCE

The speaker then announced that Dr. Hugh Morgan of Nashville had requested and had been extended the privileges of the floor for the purpose of stating a grievance against the Board of Trustees and the editor.

Dr. Morgan was then recognized and read his prepared statement to the house.

The statement was referred to the Grievance Committee by the speaker.

The regular order of business was resumed.

The speaker called for the report of the secretary-editor.

Dr. H. H. Shoulders read his report as secretary-editor.

REPORT OF THE SECRETARY-EDITOR FOR THE CALENDAR YEAR 1937

To the House of Delegates of the Tennessee State Medical Association:

I have the honor to submit for your consideration the following report on the activities of the headquarters office for the year 1937.

This report is of necessity brief. It cannot possibly be more than a brief summary. For convenience of reference these summaries will be submitted under several different headings.

Condition of the Association

Membership.—The membership for 1937 was 1,650. This is the largest membership roll we have had for several years.

The headquarters office has carried on a number of activities at various times calculated to stimulate our membership to the highest possible level.

Our membership for last year is about as high as it can possibly be expected to go under prevailing conditions.

In considering the matter of membership it is essential that one bear in mind a few fundamental facts.

First, is the matter of policy. Do we strive for numbers, or do we strive for quality? The two objectives, sooner or later, always conflict.

Second, the association does not include colored doctors as members.

We have an A-grade school for colored students and a large number of colored doctors in the state. It is estimated that the number is between 450 and 500.

Third, the association does not accept nongraduates. A relatively large number of doctors years ago obtained a license to practice before graduation and never did graduate. They are, therefore, not eligible to membership.

A relatively large number of doctors do not qualify on an ethical basis. They are, therefore, rejected for membership by the component society to which they apply for membership.

Each component society is in complete control of its membership and should be. It does the electing. It also does the rejecting and there is no disposition on the part of the headquarters office to make undue pressure on a component society to elect to membership a man who is objectionable to existing members.

When carrying on a campaign to increase our membership just a few years ago we made the mistake of writing nonmembers, who had once been members, hoping that we could stimulate these men to re-enlist with organized medicine. The immediate reaction was that the officers of component societies informed us, very properly, that some of these very men had been expelled and others were objectionable for various reasons.

As stated before, our membership is relatively high. Our ratio of members to the total number of doctors in the state, as listed in the American Medical Association directory, is fifty-six per cent.

There are only 1,289 doctors in the state listed in the American Medical Association directory who are nonmembers. It is appropriate to consider this group of 1,289 members for just a moment. A number of these listed in the American Medical Association directory are retired. Another fairly large number are engaged in other occupations. For example, Dr. Dunklin of Gallatin operates a cooperative creamery.

Another large number, between 450 and 500, are colored.

Another fairly large number are objectionable. For example, we have had the embarrassing experience of having some narcotic violators as members of the association. This alone has sufficed to create an embarrassing situation.

There is another group whose lack of interest may be attributed to general inertia.

If one should spend the time and money to develop their interest in organized medicine in one year, it would be necessary to spend the same money and effort to obtain their membership the next year, etc. They would do the organization no harm, but, in all probability, they would do it no good.

A comparison of our ratio of membership with that which obtains in several other states may be of interest.

California has 10,859 doctors, 5,695 of which are members—a ratio of fifty-two per cent.

This organization has dues of $15 per year; a very expensive headquarters setup and a full-time executive secretary who is a physician on a salary of $12,000 per year.

Colorado has 1,933 doctors and a membership of 1,139—a ratio of fifty-nine per cent. This state maintains a very expensive headquarters setup.

Illinois has 11,672 doctors and a membership of 7,287—a ratio of sixty-two per cent.

There is no color line. The state is densely populated—the area of the state is not as large as Tennessee. It has several full-time capable doctors in the executive offices.

Maryland, a southern state, has 2,730 doctors and a membership of 1,379—a ratio of fifty per cent.

It will be remembered that Tennessee has a membership ratio of fifty-six per cent and that this ratio is on an average with the ratio of other states mentioned. This same condition will hold if carried throughout all the states of the Union with a few minor exceptions.

Notwithstanding our full knowledge of all these facts we took a step last year to determine if it would be worth while to put the assistant secretary in the field for an extended trip through the councilor districts with a view to building the membership up higher than it is. As a first step in this direction each councilor was requested to supply information and to give his opinion on the venture that was being contemplated. As a result of this correspondence this step was not taken on an expensive scale because it was realized that the result could not be commensurate with the outlay of money. A few statements from the councilors may be of interest.

Dr. L. E. Dyer, Councilor, First District

"A number of aged men who are more or less inactive, yet not interested in society work locally. The membership and attendance almost 100 per cent among the young physicians."

Dr. S. R. Miller, Councilor, Second District

"In reference to Jefferson and Claiborne Counties, the majority of these men are growing old, and are having difficulty in keeping up with their work. The directory of the American Medical Association includes invalids, and on several occasions men who have been dead two or three years."

Dr. Hiram A. Laws, Councilor, Third District

"I feel that it would be an expensive and rather disappointing trip."

Dr. J. R. Thompson, Jr., Councilor, Eighth District

"The biggest drawback that a full-time man in the field will have in his solicitation for new members will be the fact that most of the men, who are not members, would not be acceptable to the local society, or are not eligible for membership."

From this correspondence with the councilors and from our knowledge of the conditions from several previous surveys and studies, the decision was reached that one could spend two or three thousand dollars and not obtain more than one hundred additional members, and thus squander funds which will be needed and can be well used in other directions.

The policy of urging smaller units to combine with other smaller units, or larger units, has been carried on. We see an increasing sentiment for such combinations. The final consummation of such steps must be taken by the local component units themselves. We hold to the view that however meritorious such action is a step taken to compel such action would work out very badly.

We believe that progress should be made in logical successive steps. Progress by radical leaps and bounds could result in disastrous disturbances.

Finances

A detailed statement of the financial affairs of the association will be filed with the house by the treasurer in the form of an audit by a certified public accountant.

Since the income and disbursements passed through the office it is appropriate to make brief reference to the finances.

The gross income of the association for the year 1937 was $16,781.51.

The gross disbursements amounted to $14,913.07.

The three principal sources of income are as follows:

Dues	$10,674.00
Advertising	4,717.80
Commercial Exhibits	520.00

The other items of income are of minor importance.

Three years ago an opportunity was presented for the association to participate in carrying forward the postgraduate activity that is now in progress in the state. At that time it was considered not wise for the association to undertake the effort and the expense under the then existing financial conditions. The dues were increased by $2.00 per year. The economic conditions improved and then the activity was undertaken without financial embarrassment and with the greatest possible good to our membership throughout the state.

The association financed all the preliminary steps in the organization of this activity and made its contribution of $1,500. The prospects are that similar activities will be carried on with respect to other subjects.

The expenses of members of various standing committees are borne out of the association funds as they should be.

Editorial Duties

It is assumed that each of you is familiar with the contents of the twelve issues of the JOURNAL that appeared last year. Extended comment would be inappropriate. We do deem it appropriate, however, to call attention to a few facts.

Our JOURNAL is an organization periodical. It cannot be run as a purely special publication devoted alone to scientific matter as many special medical journals are.

It is considered desirable that our publication contain organization matter as well as scientific matter.

It has been considered appropriate too that the editor devote the editorial page to the consideration of developments and activities of groups, both social and political, which affect, or apparently are designed to affect, vitally the medical profession.

It would be much simpler for the editor to prepare a brief scientific article as an editorial, but, in our opinion, this step would fail to keep our membership informed. Whether this policy is proper or not, whether it is a success or not, you will answer.

It will be remembered that the present and the immediate past constitute a period in American history in which more radical suggestions have been made concerning the relationship between government and medicine than were ever made in any like period before.

The editor has assumed that a part of his task was to remain on sentry duty and to give signals of danger if he happened to see it at a distance.

It is not an easy task for one to make all the observations and do all the reading necessary to form an opinion and to enable one to interpret the actions of the various groups and agencies which constitute a threat to American medical democracy. One instance will be cited to illustrate this point:

A few months ago the daily newspapers carried news of a revolt in organized medicine which was led by a small group of self-appointed doctors. On about the same day that the newspapers reach the headquarters office a communication was received from the secretary of the self-appointed group requesting the consideration of certain principles and proposals.

The secretary-editor was besieged on all sides for information and for some interpretation of what this action meant.

The Board of Trustees was called together for the purpose of considering the principles and proposals.

The secretary-editor prepared an extended statement containing facts and his interpretation of these actions.

The Board of Trustees took action and, in addition, endorsed the statement prepared for publication in the JOURNAL as a matter of information to the members.

It is obvious to any one that it is utterly impossible to reply to all the inquiries received by letter.

These acts provoked some reactions on the part of the revolters.

It would have been far easier and far simpler to have ignored this whole development. It was not ignored nor was the responsibility, if such did exist, shirked.

There are many other developments that are taking place which, in my opinion, are of far greater significance.

The present is no time for a cheap compromise of principles to which we have adhered and which we consider to be right. It is no time for ill-considered action on the part of any responsible group of professional men. It is time for unity. A time for loyalty. Those who forsake the principle to which we subscribe and criticize the profession as a whole in the lay press are of doubtful benefit to organized medicine and the ideals we hold.

In conclusion, I wish to acknowledge the hearty cooperation of the officers of component units, the officers of the association, and the membership at large. This cooperation and the statements of commendation that have been received from many sources constitute a large measure of reward for the duties that have been performed.

Respectfully yours,

H. H. SHOULDERS, M.D., Secretary-Editor.

April 12, 1938.

The report was referred to the Committee on Reports of Officers.

REPORT OF COMMITTEE ON POSTGRADUATE INSTRUCTION IN OBSTETRICS

Dr. J. R. Reinberger reported for the Committee on Postgraduate Instruction in Obstetrics:

Last year in the report to the State Medical Association a review was given of the factors which led up to the establishment of postgraduate medical teaching in Tennessee. The report enumerated the agencies contributing to the program and described the organization of the first two circuits, the method of instruction, and the preparation of the written lectures. A map was attached on which was outlined the circuit districts and the dates that instruction would be given in each district. Little or no deviation has been made from the original outlined circuit areas as set up at the outset of the program. In other words, plans were carefully and precisely laid and those plans have developed as made while the course progressed.

Last year instruction had been given in ten centers with 190 doctors being enrolled up to that time. The details given last year are therefore omitted from this report and this year a report is offered showing a summary of the work done.

Lay Lectures

It is interesting to note that a total of 4,078 lay individuals have attended these lay lectures. These lay lectures were given in addition to the instruction program given to the doctors plus the free private consultations among the doctors in the teaching program. Officers of the county medical societies arranged for the most of these lay lectures.

Record Cards

During the first lecture entitled "Prenatal Care, Examination of the Patient and Diagnosis of Pregnancy," the instructor recommends that doctors keep records of their prenatal examinations and sum up the discussion of records with the slogan: *You cannot play the game without a score card.*

The State Health Department promptly made funds possible for the printing and dispensing of these gratis to physicians which will in turn aid vital statistics in Tennessee.

Abstract of Lectures

The office mimeographed the lectures, which Dr. Whitacre placed in writing, and these were neatly placed in a bound volume with a printed cover and given to doctors who wished them at the close of each course, who were willing to pay $1.00 for the material going into each book.

Certificate of Attendance

A certificate of attendance was voted by the committee to those doctors who attended eighty per cent or more of the lectures.

Statistical

Number of circuits	7
*Number teaching centers	35
Number counties included to date	67
Number paid enrollments to date, by doctors	1,138
Number private consultations held with doctors	315
Average attendance—by doctors—all circuits	82%
Number of communities receiving lay lectures	40
Number lay lectures	42
Number laity attending	4,078
To accomplish program to date:	
Number miles traveled by instructor	23,417
Number miles traveled by field director	31,502
Total number miles traveled	54,919

Future Subjects

A questionnaire which solicits the opinion of the doctors regarding the course in obstetrics was sent out.

The results have been tabulated and show the following preferences for future subjects, requested by vote of the doctors, entering into this first course as follows:

Internal medicine	348
Pediatrics	268
Surgical diagnosis	239

MATERNAL WELFARE COMMITTEE

Your attention is invited again to the work of the Maternal Welfare Committee, whose personnel conducted a survey some several years ago; made a report to this association and which resulted in the establishment of this postgraduate program in obstetrics. The district chairmen of the Maternal Welfare Committee have been prime factors in the promotion and the organization of the postgraduate course in obstetrics in each of their districts.

The five-year lay educational program was launched in March of this year and constitutes a follow-up of a splendid work of lay lectures given by Instructor Dr. Whitacre in many communities in Tennessee. It was felt by the Maternal Welfare Committee that there was not enough time for the instructor, in connection with the postgraduate program for doctors, to give sufficient lay lectures throughout the state; hence, a program which will extend the activities of lay education to the public and particularly to lay women, has been placed in the hands of each district chairman and county societies have been notified that if they will call upon the chairman over their district, they can have details outlined as to how each county society can conduct this lay education program, set up clinics, secure funds, sterile packs and disseminate printed instructions to prospective mothers for the necessity of prenatal and post-partum care.

In conclusion let me state that this two years of work by the Committee on Postgraduate Instruction in Obstetrics will leave in Tennessee among 1,400 physicians permanent teaching of valuable information which will assist them in obstetrical problems and which is certain to be a factor in reducing infant and maternal mortality in the various counties in Tennessee.

The efforts made to promote the keeping of records of obstetrical cases will make far more complete reports and vital statistics for our state and the written lectures left in the hands of the doctors will provide a ready reference of the diagnostic symptoms and accepted therapy in the practice of modern obstetrics and the handling of those cases of complications that arise in every physician's practice. This handbook will be found in use for four and five years following the course as the physician's guide to obstetrics in Tennessee.

All of this, let me remind you, has been provided by your Tennessee State Medical Association and by the simple method of returning some of the moneys which the doctors pay in annual membership dues back to them for the advancement of each member's professional life and practice, the very thing with which a doctor makes his livelihood.

This program of obstetrics teaching ends two years of intensive effort December 1, 1938, by a conscientious committee who have given their time unhesitatingly for organized medicine in Tennessee.

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*Memphis, Jackson, Nashville, and Chattanooga had special courses for colored doctors.

JAMES R. REINBERGER, M.D., Chairman.
FRANKLIN B. BOGART, M.D.
O. W. HYMAN, Ph.D.
JOHN M. LEE, M.D.
J. O. MANIER, M.D.
W. L. WILLIAMSON, M.D.
JOHN B. YOUMANS, M.D.

Report referred to Committee on Reports of Committees.

MINUTES ADOPTED

Moved by Dr. H. H. Shoulders, seconded by Dr. H. B. Everett, put to a vote and carried that minutes of last year's meeting be approved as printed in the September, 1937, issue of the JOURNAL.

Meeting recessed at 4:00 P.M.

WEDNESDAY MORNING MEETING

Speaker Zemp called the House to order at 9:00 A.M.

Reports of councilors were called for.

First District

DR. L. E. DYER, Councilor

DR. L. E. DYER: This report is for the First District, and one of the important things that we have accomplished this year in the First District has been the organization of the new society in Erwin. Erwin is in Unicoi County. The society was chartered on January 11, 1938; the organization meeting and the election of officers was held in December, 1937. They are now having regular meetings. It is a small society with only six members, but they are having regular meetings and are carrying on the work in an organized way the same as the other counties.

Washington County, one of our strongest societies of the First District, has thirty-two members; they have had an increase of four new members this year and have lost two members by death. It is interesting that in the First District we have lost only two members by death and they were both in Washington County, Dr. H. M. Cass and Dr. C. S. Kinzer, I believe they were, and in the other counties we have no record of any deaths.

Sullivan and Johnson Counties have a membership of fifty-four with an average attendance of twenty-five to ten meetings during the year. Cocke County has a membership of nine and had nine meetings with an average attendance of seven. The membership of Carter County is seven, with an average attendance of eight at their twelve meetings during the year, one doctor having met with them who has not yet joined. In my own county, which is Greene County, we have increased our membership by three. The number of active members is twenty and there were three new members taken in during the year.

So on the whole the counties in the First District are active, with the exception of three counties, Hancock, Claiborne, and Hawkins, all three of which are unorganized. I went over to Tazewell and Speedwell. There are very few doctors over there, really not enough to organize societies, and it is really very inconvenient for them to attend meetings of other societies. Morristown of Hamblen County would be the closest.

So in the First District we have had only two deaths and we have had a gain in membership of eighteen.

Second District

DR. S. R. MILLER, Councilor

We have seven of the ten counties in this district organized and functioning. Three of these counties have active membership from twenty-two to 151 and are doing splendid work. Four counties have thirteen or less members and are having scientific programs, but their small membership is not conducive to very much enthusiasm.

The three unorganized counties have very few members of the profession and some of these are retired or semiactive.

We have a total of 241 members. The secretaries have reported twenty-seven members of the profession who are considered eligible for membership.

We have had sixteen new members, three members have died, and six had not paid their dues at the time the secretary made the report. Some or all of these will eventually be reinstated.

Of the twenty-seven physicians reported eligible, I am satisfied that some of these members are too old for active service, and some do not have sufficient age in membership list. We are securing the names of these twenty-seven members to see what can be done towards adding them to our membership.

Several members from these unorganized counties have joined societies in adjacent counties.

We cannot expect to add many members from this small list.

Respectfully,
S. R. MILLER, Councilor.

DR. S. R. MILLER: I want to say that this report is as of April 1. Since this report was prepared two doctors reported eligible in Knox County have died. Anderson County has lost one of its active members, who is eighty-three years of age. That is a small change, but we cannot hope, gentlemen, to do much better, because I am satisfied that some of the doctors are not eligible. For instance, one doctor who has been counted eligible is sick and retired and our society is considering electing him a veteran member. I do not think that we can do that, however, because one is required to have had a certain number of years of membership, and although he has been a member before, I do not believe he has enough years of membership to make him a veteran member. Another doctor who has been proposed or is thinking of applying, I do not believe would be acceptable. So we have about all the eligible, active, good material in our district.

Third District

DR. H. A. LAWS, Councilor

DR. HIRAM LAWS, JR.: You said to make this short. I have mine fixed up. The Third District is composed of fourteen counties, and among those fourteen counties there are six counties so small they have no societies; they have not enough men to form societies and they have gone to other counties. Last year we lost in all of our fourteen counties four members by death. We gained twelve new members. So we have a pretty good record. Outside of that I do not think there is anything that is any different from what it was last year.

My counties are Bledsoe, which has no society, Bradley, Franklin, Grundy, Hamilton, Meigs, which has no society; Marion, which has no society; Monroe, McMinn, Sequatchie, Van Buren, which has no society and is without a doctor—there is no doctor in that county—Warren, which has no society, White, and Polk.

Fourth District

DR. J. T. MOORE, Councilor

We have in the Fourth District eight active county societies reporting, namely, Jackson, Fentress, Macon, Overton, Putnam, Smith, Sumner, and Wilson, the other counties not reporting.

Cumberland has a working organization and five or six members. There is no working society in Clay, Pickett, Morgan, Rhea, and Trousdale so far as I know, but these being small counties a number of doctors attend meetings in adjoining counties and quite a number of good doctors in these counties are members of the state organization.

In Jackson County Dr. J. D. Quarles is president and Dr. E. W. Draper is secretary. Six members in the society. They have had one death during the past year, Dr. I. B. Clark of Gainesboro, who was a valuable public health member. All six doctors of this county are members.

Fentress County has a society of five members, but are not very active. Macon County has ten physicians in the county, five of whom are members and have a good working society. Dr. Howser is president and Dr. Freeman is secretary.

Overton County—Dr. W. M. Breeding is president, Dr. A. B. Quarles is secretary. Eleven physicians in the county, six of whom are members of the society. Their attendance and meetings are irregular.

Putnam County—Dr. R. L. Witherington is president, Dr. T. Shipley is secretary. Nineteen physicians in the county. Ten of these are members of the society and are very active. Twelve meetings and twelve papers during the year.

Smith County—Dr. A. O. Parker is president and Dr. Harry S. Wilson is secretary. Nineteen doctors in the county and ten members. They have a very active society. Twelve meetings and twelve papers during the year.

Sumner County—Dr. C. D. Robbins is president and W. M. Dedmond is secretary. Twenty-three physicians and sixteen members. Have a good, active society.

Wilson County—Sixteen members which include all the physicians of the county. Have an active society. Twelve meetings with a good attendance.

We have in this district "The Five-County Medical Society" composed of thirty members who meet six times each year. This is a most interesting and valuable society for this section. And a great number of physicians in the district who do not attend any county society attend this organization regularly.

DR. J. T. MOORE.

Fifth District

DR. JOHN W. SUTTON, Councilor

DR. JOHN W. SUTTON: The Fifth District has six counties, but we have only three counties that are meeting and working. Moore County, one of the smallest in the state, has only two doctors and those two doctors are members of other societies. We have attempted to reorganize Marshall and Coffee Counties, but it looks like it is impossible to do it. We just do not have enough to work with. We have attempted to reorganize them, but there seems to be very little prospect of reorganizing them. I think that is about all.

Sixth District

DR. H. S. SHOULDERS, Councilor

The Sixth District consists of five counties, three of which have active organized medical societies. Davidson, Robertson, and Montgomery Counties have organized societies, while Cheatham and Houston are not organized. There are so few doctors in these two counties that it is not practical to organize. The doctors of these two counties attend the meetings either in Robertson, Montgomery or the Black Patch medical societies.

Members in Sixth District, 312; doctors in Sixth District, including about 100 colored, 485; deaths, five.

Deceased members: Dr. Gross Long, Nashville; Dr. Duncan Eve, Sr., Nashville; Dr. A. L. Sharber, Nashville; Dr. M. L. Hughes, Clarksville; Dr. Jenkins, Goodlettsville.

H. S. SHOULDERS, M.D.,
Councilor Sixth District.

Seventh District

Dr. C. D. Walton, councilor, absent.

Eighth District

DR. J. R. THOMPSON, Councilor

DR. J. R. THOMPSON: In the Eighth District we have thirteen counties, ranging all the way from Kentucky to the Mississippi state line, and of those thirteen counties, twelve have active organizations. The other county has only four or five doctors and they cannot decide what they want to do so two or three are affiliated with neighboring counties.

Our membership is not as good this year as it was at this time last year, due to the stimulus of the postgraduate course schedule, which had just been completed in this district prior to the state meeting. Several men have not paid their dues. In Fayette-Hardeman Counties, for instance, there are six eligible for membership who are not members of the society. I called on that society and went over the matter thoroughly with them. They said that none of those doctors are acceptable to the local society, but the report shows that there are six doctors who are not members. I do not know whether or not they are eligible. In Henry County six men have not paid their dues, and of those six men only two are eligible for membership. Madison County has thirty-seven physicians in the county and forty members. In McNairy County there are ten physicians, of whom five are members. All ten were members last year.

Two men have died, one in Henderson County and one in Henry County. That is about the extent of this report.

Ninth District

DR. E. H. BAIRD: I have no special report to make. The medical organization is on a par with what it has been in past years. I have received reports from seven of the counties. We have four very active societies up there in my territory. I have tried to get the men in the other counties to join in with us so that we could have good society meetings, but it seems that they have an idea that they may lose representation or something of that sort and they have not joined in. However, they do come to our meetings. We do have good meetings within a radius of about thirty minutes travel of practically all of our doctors; we are very proud of our meetings and of our organization. The membership is about the same as it was last year, and there has not been much change.

Tenth District

Dr. W. B. Burns, Councilor

DR. W. B. BURNS: Number of members of the society now 331, including thirteen associate members and seven veteran members; number of physicians residing in the county about 360; number of physicians eligible for membership who are not members of the society about thirty-five; number of new members during the year, regular, twenty-nine, and associate, six; number of members who died during the year, seven. We have the names of those members. They were: Dr. O. S. Warr, who was president at the time of his death; Dr. J. I. Mitchell, Dr. L. L. Meyer, Dr. E. C. Ramer, Dr. H. R. Townsend, Dr. J. L. Minor, and Dr. W. R. Wallace. Number of members dropped from membership roll, three, two by transfer and one resigned; number of meetings of society during the year, nineteen; average attendance at meetings, sixty-five; number of scientific papers read, thirty-six, and thirty-six case reports. Dr. J. J. Hobson is president of our local society and the secretary is Dr. A. F. Cooper.

I have made some effort throughout the county to increase the number of members. I have approached several. As you know, an accomplished speaker says "contacted." I have contacted several of the eligible doctors in the county so many times that when they see me on the street they turn the other way. It is pretty hard to get them in.

I have made one visit to look over a hospital for the purpose of registration for the American Medical Association. Dr. Turner's and Dr. Gotten's sanitarium was registered as being eligible.

We do not report for the negroes, but I imagine that there are about seventy-five registered negro doctors in the state. They are pretty good negroes, but our House of Delegates did not permit them to associate with us. They asked to be permitted to come to some of the meetings, but it was not thought wise. Personally, I could not see any harm in permitting them to attend. Before the war we used to permit the old servants to come in the back of the church. In my church (I have a church) we have a gallery where the negroes used to sit. The servants used to drive the carriages and they used to sit in the gallery.

DR. A. F. COOPER: If I may be so bold as to make a correction, we did agree to permit the negroes to come in. Dr. Burns was not present at that meeting.

STATISTICS OF COUNCILORS' REPORTS

COUNTY and DISTRICT	*Members in County*	*Physicians in County*	*Eligible Nonmembers*	*New Members*	*Died During 1937*	*Dropped*	*Society Meetings*	*Average Attendance*	*Papers Read*
FIRST DISTRICT—									
Carter	7	11	4	0	0	2	12	8	13
Cocke	9	13	4	0	0	0	9	7	4
Greene	20	24	2	3	0	0	11	11.7	19
Sullivan-Johnson	54	60	6	5	0	0	10	25	12
Unicoi	6	7	1	6	0	0	2	5	0
Washington	41	57	22	4	2	4	19	24	28
SECOND DISTRICT—									
Anderson	12	18	6	1	1	0	12	7	12
Blount	24	32	6	4	1	4	45	10.91	22
Campbell	22	26	4	1	0	1	9	8.6	7
Hamblen	13	12	0	1	0	0	12	10	12
Knox	161	160	4	8	0	0	40	66	41
Roane	12	18	6	1	1	0	11	7.8	11
Scott	8	9	1	0	0	0	10	6	0
THIRD DISTRICT—									
Bledsoe	2	4	0	0	0	0	0	0	0
Bradley	17	20	3	2	0	1	10	10	10
Franklin	7	14	7	0	0	1	12	6	11
Grundy	6	6	0	0	1	0	2	50%	0
Hamilton	137	177	14	9	1	1	36	54	50
Marion	1	6	0	0	0	0	0	0	0
Monroe	15	16	0	0	0	0	15	10	14
McMinn	18	19	3	0	0	0	6	10	12
Warren	0	13	13	0	0	1	0	0	0
White	11	12	0	1	2	2	12	6.42	0
Polk	7	11	3	0	0	0	3	3	0
FOURTH DISTRICT—									
Jackson	6	6	0	2	1	0	0	90%	0
Macon	5	10	3	0	0	0	4	4	0
Overton	6	11	5	1	0	0	0	0	0
Putnam	10	19	8	0	0	1	12	8	12
Smith	9	13	4	1	0	0	12	5	12
Sumner	16	23	4	1	0	0	12	10	12
Wilson	16	15	0	0	2	2	12	9.5	11
FIFTH DISTRICT—									
Bedford	17	16	2	2	0	0	12	10	11
Lincoln	16	20	4	2	0	2	6	8	6
Rutherford	22	18	4	3	0	0	12	14	12

SIXTH DISTRICT—									
Davidson	279	372	0	17	1	9	36	80	30
Montgomery	18	22	4	1	1	0	10	15	8
Robertson	15	20	5	0	0	0	8	10	15
SEVENTH DISTRICT—(No report)									
EIGHTH DISTRICT—									
Fayette-Hardeman	19	25	6	4	0	0	8	9	16
Henry	11	17	6	0	1	2	12	7	30
Madison	40	37	0	2	0	3	12	25	12
McNairy	5	10	5	0	0	5	6	2	6
NINTH DISTRICT—									
Dyer, Lake, and Crockett	36	42	9	3	0	1	9	30	28
Gibson	26	38	5	1	1	0	9	15	20
Haywood	12	15	3	1	0	2	12	9	18
Lauderdale	8	14	6	2	0	0	1	5	0
Weakley	15	20	5	0	0	0	0	0	0
TENTH DISTRICT—									
Shelby	331	360	35	35	7	3	19	65	36

UNICOI SOCIETY CHARTERED

Moved by Dr. H. H. Shoulders, seconded by Dr. C. F. N. Schram that the House of Delegates issue a charter to Unicoi County, upon recommendation of the council after their constitution and by-laws have been approved by the council.

Motion put to vote and carried.

ELECTION OF COUNCILORS

The Nominating Committee placed in nomination the following councilors for reelection:

First District—Dr. L. E. Dyer.

Third District—Dr. H. A. Laws, Jr.

Fifth District—Dr. J. W. Sutton.

Seventh District—Dr. C. D. Walton.

Ninth District—Dr. E. H. Baird.

There being no other nominations, a motion was made by Dr. S. R. Miller, seconded, put to a vote and carried that the secretary cast the unanimous ballot of the house for these nominees.

After the vote the speaker declared them elected for a term of two years.

Speaker Zemp spoke on the work of the councilors as follows:

In these district reports there is one thing with which I am impressed, and that is, these councilors are men of high standing and intelligence. They live in their communities, they know all the doctors in their communities and they know them well, so if these councilors cannot get their list of members up, how in the world is anybody else who does not know them going to do any better than they do? Personally, I think the membership of the society depends largely on the councilors and how well they fulfill their duties, and if you have any reason to believe that a councilor is not doing his duty, then you ought not to reelect him, but from these reports these men have performed their duty conscientiously and thoroughly and I think they have gotten every physician whom it is possible for them to get in their districts. Therefore, I think they are to be commended for their work during the past year.

REPORT OF THE COMMITTEE ON SCIENTIFIC WORK

Dr. H. H. Shoulders, chairman, submitted a copy of the program as evidence of the committee's activity.

REPORT OF THE STATE TUBERCULOSIS COMMITTEE

DR. W. S. RUDE: This committee has endeavored to get the various county societies to devote one meeting during the year to a discussion of tuberculosis, and we have succeeded in getting about three-fourths of the counties to devote that time to this subject.

The final figures for the number of deaths from tuberculosis for 1937 are not yet available, but we are advised that the total number of deaths would be approximately 2,400, and that the death rate was approximately 85.5. This is a reduction of 6.5 deaths per 100,000 from the 1936 death rate of 92.1.

While this reduction is encouraging, and shows that slow but definite progress is being made, we are still confronted with the fact that Tennessee leads the United States in the death rate from tuberculosis.

Lay organizations, politicians, and the public in general are rightfully demanding that a still further reduction be made in this death rate and are looking to the medical profession to take the lead in some plan of fight that will offer the best results at the least expense.

In view of the extremely uncertain financial situation and more especially the high minimum cost of an adequate hospitalization program, we seriously doubt if it would be advisable to attempt at this time any specific tuberculosis hospitalization program other than some measure of relief to the indigent.

We are advised by the State Department of Health and the State Tuberculosis Association that, at the present time, they are opposed to the construction and maintenance of state hospitals for the tuberculous, but will ask for an appropriation from the state to be used to supplement funds provided by counties to help the counties in the hospitalization of the indigent persons sick with tuberculosis. Details of the bill have not been worked out, but the plans call for limited hospitalization of the indigent tuberculous in approved existing general hospitals and sanitariums, and in county hospitals that may be built in the future.

This committee favors, in principle, this plan of rendering aid to the indigent tuberculous and can see no reason why our society as a whole should not approve a program of this type.

We are of the opinion that the private physician with a reasonable amount of training in the application of modern recognized treatment principles can to a large extent obviate any future need for special tuberculosis hospitals.

We believe that some plan for the special training of physicians in the selection of patients and the technique of collapse therapy should be considered. Since this procedure is largely a matter of special training for the individual physician and is a technique that cannot be taught to or used by the medical profession as a whole, there should be some system or method for selecting one or two physicians from each county for special training in collapse therapy. Over a period of time a relatively large number of competent and trained men would be available to supply the public with the same form of treatment that is being given seventy-five per cent of the patients that are admitted to special institutions.

Special training of selected men could be arranged with our large county tuberculosis hospitals or with the two medical colleges of our state. This committee favors the training of these men in three grand divisions of the state in large county tuberculosis hospitals.

We can give no particular reason why Tennessee's death rate from tuberculosis should be higher than that of our neighboring states other than the fact that we are not doing anything about the problem. To sit still and do nothing about a question that vitally concerns the medical profession, and especially concerns the public, is certain to result in lay organizations taking the lead in some legislative program that may be objectionable to this society.

It is our understanding that the legislative committee of this society, on account of having other important legislative measures to be considered, cannot take any active part in securing the passage of a bill relative to this question, therefore, we, your committee, recommend that the House of Delegates approve, in principle, a program of this nature by the State Department of Health and the State Tuberculosis Association.

This committee desires to present to the House of Delegates the following questions for approval:

1. That the House of Delegates instruct the Board of Trustees to appoint a committee of four physicians to meet with representatives of the State Board of Health and the State Tuberculosis Association to work out plans and details of a legislative program for securing funds and to work out details for the treatment of indigent tuberculous patients in general hospitals and sanitariums and in existing or future built county tuberculosis hospitals.

2. That the same committee in connection with the State Board of Health and the State Tuberculosis Association make immediate plans and work out details of a program for the securing of funds from some source for the special training of a limited number of physicians in collapse therapy.

STATE TUBERCULOSIS COMMITTEE.
W. S. RUDE, Chairman.
O. N. BRYAN.
C. M. OBERSCHMIDT.
J. L. HAMILTON.

Report referred to Committee on Reports of Committees.

REPORT OF LIAISON COMMITTEE

Dr. W. C. Dixon, chairman.

Acting on instructions given the Liaison Committee by the House of Delegates at the 1937 meeting in Knoxville, the committee prepared a treatment form for use in uncomplicated cases of syphilis and carried on certain educational efforts concerning this disease.

These forms were printed and distributed by the State Health Department, a copy being sent to each member of the society.

We have called attention to this treatment form in a statement in the JOURNAL.

At our request Dr. Guerney Clark has prepared an article on "What the Public Should Know About Syphilis." This article was published recently in the JOURNAL and reprints are available at this meeting.

It was felt that this article might serve as the basis for educational talks to the laity.

The State Health Department secured a talking picture on syphilis intended primarily for the public. It contains, however, a good deal of educational material valuable to physicians. The department also had available a series of slides useful in a scientific discussion of syphilis.

The Liaison Committee requested each county society in Middle Tennessee to devote one meeting to a discussion of syphilis, at which meeting the picture and slides would be more available, together with a speaker, if the society so desired.

Eleven such meetings have been held, some professional, some for the laity, and one society had an afternoon meeting for doctors and a night meeting for the public.

It is felt that these meetings have some value, and if the House of Delegates feels that they should be continued we believe that the picture and slides can be made available for similar meetings in East and West Tennessee.

The committee has approved a series of articles on syphilis written by a reporter of the *Nashville Tennessean* and published in that paper.

These articles have stimulated a good deal of public interest, and it might be advisable to have similar articles published in other papers over the state as a means of educating the public to the importance of syphilis.

We believe that if it were possible to obtain the support of motion picture theaters in showing slides of an educational nature regarding syphilis it would be of great value, and if the House of Delegates thinks this is wise we will make such an effort.

We have had the hearty cooperation of Dr. Williams, commissioner of health, and his associates in our efforts, and we are under obligations to our president, Dr. Williamson, and a number of our members for their aid in holding the meetings referred to above.

Report referred to Committee on Reports of Committees.

REPORT OF COMMITTEE ON PUBLIC POLICY AND LEGISLATION

Dr. L. W. Edwards was called out of town and the report was read by Secretary Shoulders.

Mr. Speaker and Members of the House of Delegates:

Your Committee on Legislation and Public Relations submits the following report:

As you will recall this committee made the last report in Knoxville, one year ago, while the legislature was in recess.

Two bills had been introduced, one was an amendatory act to revise and make certain changes in the present Medical Practice Act; the other was a "Basic Science Act" setting up a board of examiners and requiring all persons practicing the healing art in any form, except Christian Scientists, chiropodists and opticians, to take an examination in the five basic science subjects, namely, anatomy, physiology, pathology, bacteriology, and chemistry.

Neither of these bills passed and to make a full report on the cause of failure of passage of the acts would be entirely too long and tiresome. Suffice it to say, however, the members of this committee did a good deal of work that will not be wasted. Much valuable information was gained in the unsuccessful attempt and when the next legislature convenes, I am sure the committee will be much better prepared and fortified than it was last year.

Unless this body otherwise directs or objects, your committee would recommend that only one of these acts be introduced in the next legislature; it would seem from our experience that too much legislation attempted at one sitting produces a rather severe and unfavorable reaction on the members of our lawmaking bodies and at the same time it gives our opponents too much of a foundation on which to stand and fight.

It is the opinion of this committee that an amendatory act to the present Medical Practice Act should be passed that will create a provision for the proper hearing and disposition of the cases by the Board of Medical Examiners, when physicians are guilty of unprofessional conduct; also there are a few other changes that should be made in the act, but the bill should not be overloaded by other amendments.

We think a basic science act creating a board, whose members are teachers of the various subjects included in colleges and universities in the state, but who are not practitioners of the healing arts in any form, should be enacted, but that it would be wise to hold it for passage at the legislature of 1941 instead of trying to pass it in 1939.

This committee was successful in getting the present status of the Public Health Act restored, which was destroyed when the present reorganization bill which is now operating the state government was drawn. It was also successful in preventing the passage of a bill known as the "Naturopathic Act" which was vicious and would have allowed any known method of quackery to be practiced. This committee respectfully requests that this body make suggestions and give instructions on any further proposed legislation for the state society in order that it can work under authority.

Respectfully submitted,

LEONARD W. EDWARDS.

The report was referred to Committee on Reports of Committees.

COMMUNICATION FROM NURSES' ASSOCIATION

In connection with this report Dr. Kyle Copenhaver read a communication from the chairman of the Nurses' Educational Committee. The matter was referred to the Committee on Resolutions.

REPORT OF COMMITTEE ON INSURANCE

Dr. A. F. Cooper, chairman.

Our members are not taking advantage of the accident and illness coverage which is afforded by our group policy with the National Casualty Company of Detroit. This is due in part to the fact the company changed state representatives about August 1, last. The J. O. Tankard Insurance Agency of Nashville now represents the company. It was necessary for Mr. W. M. Tankard to devote several weeks to assisting the company in correcting considerable confusion in the matters of records, etc., which existed at the time his agency became state representative. In a personal communication to the chairman Mr. Tankard states, "We have had earnest desire to be of the greatest service to you members in the extension of this group insurance and the handling of claims. On account of the widely-scattered membership we have been at some disadvantage in contacting the members. We have made many personal calls throughout our territory; and in addition we have written a series of letters to the members with descriptive literature enclosed. We have had two half-page advertisements in the JOURNAL." This indicates a very definite effort is being made to acquaint our members with the coverage given by this excellent policy, and to be of service in every way in the matter.

Ninety-four members were enrolled under this policy on March 30. Seventeen claims have been paid, totaling $2,173.16, between September 1, 1937, and March 30, 1938. Four claims were still pending on that date.

We urge our members who feel the need of this type of protection given by this group policy to communicate with the J. O. Tankard Insurance Agency, Cotton States Building, Nashville, Tennessee, for any information they may desire.

A. F. COOPER, Chairman.
S. R. MILLER.
C. M. HAMILTON.

The report was referred to the Committee on Reports of Committees.

REPORT OF COMMITTEE ON MEDICAL DEFENSE

Dr. S. R. Miller, chairman.

The House of Delegates, Tennessee State Medical Association:

GENTLEMEN:

The Medical Defense Committee submits herewith our twenty-fourth annual report.

The last report showed only one suit being defended by this committee as pending.

Agreement had been made by counsel of both sides to try this case in June, but the plaintiff's counsel persisted in postponing the suit until the next court, notwithstanding the former agreement.

In October our counsel was successful in preventing further postponement, but when the case was forced to trial the plaintiff took another voluntary nonsuit.

The suit can be refiled any time before the year, which is the latter part of October.

This suit and the committee's clerical work has cost us $40.50.

Last year there was a balance in the medical defense fund of $486.15, leaving at this time a balance of $445.65.

We hope this case will not be refiled again, but they have a legal right to refile it within a year.

S. R. MILLER, Chairman.
H. M. TIGERT.
H. B. EVERETT.

Report referred to Committee on Reports of Committees.

REPORT OF COMMITTEE ON EDUCATION

Dr. J. Marsh Frere, chairman, being out of the room, the report was read by Dr. W. O. Baird.

Mr. Chairman and Delegates:

In the report of this committee last year it was recommended that the chairmen of the various committees should constitute the Educational Committee in order to centralize and correlate the work of the various committees doing educational work.

When the new list of the standing committees of the Tennessee State Medical Association was published it was noted that the list did not contain the names of the men making up the other committees of educational nature as was recommended. Upon investigation it was found that in 1932 the House of Delegates passed a resolution recommending that all subcommittees of an educational nature be placed under the General Education Committee, and further, that the chairmen of each of these subcommittees be made a member of the General Education Committee. Apparently this recommendation and resolution was never brought to the attention of the Board of Trustees of the State Association, or at least Dr. Hardy. Being new at the job, I did not want to "stick my neck out" and do those things which I was supposed not to do, nor did I want to leave undone those things which I was supposed to do.

We have contacted the various committees doing education work and herein report briefly what they have done during the year:

Dr. Wm. Dulaney Anderson, chairman of Committee on Child Welfare, stated that his committee has been "pursuing its observation of the work being done throughout the county during this time, and when funds are available he will have a comprehensive program to present to the Education Committee in regard to postgraduate work in pediatrics in the state."

Dr. R. Wallace Billington, chairman of Committee on Physical Therapy, stated that as far as he knew the Committee on Physical Therapy has done nothing.

Dr. W. S. Rude, chairman of State Tuberculosis Committee, reported that his committee had been active during the year and had urged the county societies to devote one meeting during the year to tuberculosis.

Dr. Ralph Monger, chairman of Cancer Committee, reported that his committee had functioned well and that lectures had been given before lay groups, on the radio, and through the press to make the public cancer-minded.

Dr. James R. Reinberger, chairman of Committee on Maternal Welfare, has outlined a five-year program and has divided the state into seven districts with a chairman for each district. Most of the societies throughout the state have had the privilege of having the district chairman present these plans before them. At this point the committee wishes to recommend the reappointment of the Maternal Welfare Committee intact, as it was this past year.

Need I say anything about the work of Dr. James R. Reinberger as chairman of the Committee on Postgraduate Instruction in Obstetrics? Every man in the state knows how efficiently and effectively his committee has functioned. He is going to give a detailed report of his committee's work, but I do want to let him know that the Educational Committee appreciates the fine work that he and his committee have rendered to our state association.

The Committee on Medical Education has continued to urge immunization against preventable diseases, providing lecturers and demonstrations.

The committee also urges that each county medical society have a separate program dealing with cancer, tuberculosis, and syphilis. In this connection I would like to mention the fact that in Chattanooga the Chattanooga Health Council of the Chamber of Commerce has had such outstanding men as Dr. Vaughn of Detroit, Dr. C. E. Waller, assistant surgeon general, United States Public Health Service, to come into our community and lecture before the laymen and doctors on these subjects.

Finally your Committee on Medical Education wishes to recommend a continuation of postgraduate study in Tennessee after the program in obstetrics is finished December 1, 1938.

Respectfully submitted,
J. MARSH FRERE, M.D., Chairman,
Chattanooga.
R. B. WOOD, M.D., Knoxville.
D. W. SMITH, M.D., Nashville.
H. B. GOTTEN, M.D., Memphis.
W. O. BAIRD, M.D., Henderson.
J. M. LEE, M.D., Nashville.
Committee on Medical Education.

The report was referred to the Committee on Reports of Committees.

REPORT OF DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION

Dr. E. G. Wood, chairman.

The American Medical Association Atlantic City Meeting

The American Medical Association meeting in Atlantic City last June was indeed an epochal session. Never in the history of medicine has there been such an assemblage of physicians, and never before such a wealth of material for their interest and instruction. Some 9,764 doctors registered their attendance in Atlantic City, 1,295 more than registered at the great session of 1935, the high mark up to the present. Moreover, there were registered some 300 Canadian physicians at that joint session.

In the House of Delegates affairs of science and of government commanded the attention to such an extent that several extra sessions were necessary to complete the tasks before it. Every physician in the United States should read the minutes of this meeting in order that he may be personally aware of the serious matters which concerned the delegates. The significant features involved resolutions leading toward a change in the nature of the practice of medicine, a decision by the House of Delegates to cooperate with the government in working out plans for the care of the indigent sick on direct request from the government, and a personal visit to the House of Delegates from Senator James Hamilton Lewis of Illinois, bringing an authorized message from the President of the United States. He (Mr. Lewis) chucked into the very midst of this group of "grave and reverend seigniors" the sad social errors of the vicious, socialistic foundling of state medicine for the United States, which malfeasance, of course, was the thumb-in-the-soup for the nation at large as well as for the convention.

In his talk to the house the president, Dr. Heyd, stressed the major economic problems of the profession today. He discussed the increasing amount of free medical service being given each year in clinics, hospitals, and infirmaries and stated that greater care should be taken in admitting these people for free service, so as to be sure they were really entitled to such service. He approved of a plan to assure all people adequate medical care at a price they can afford to pay. He discussed "adequate service," stating that much unnecessary work is being done, and that complete laboratory and X-ray services now being done are not necessary in many cases. He referred to a recent law in British Columbia which established a system of medical care at the expense of taxpayers; the 632 physicians in this territory voted on the proposition, and since 613 were opposed to the plan, the provencal government promptly dropped the matter.

The Committee on Contraception presented a simple, dignified report of its deliberations, which was unanimously adopted by the House of Delegates. This places on the various councils the responsibility for the examination of products used in contraception. It recognizes also the necessity for teaching the scientific aspects of both fertility and sterility. It recommends that doctors inform themselves concerning their legal rights and responsibilities in relationship to the prevention of conception, and it suggests that all such practice be in regularly licensed clinics under medical control.

And here is something as fraternal as it was highly needed. A resolution was passed recommending the development of a distinguished service medal with citation to be presented each year at the time of the annual session to a physician who has rendered such service for the advancement of the art and science of medicine. This resolution, as you recall, originated with one of our worthy delegates, Dr. Shoulders, the year before.

The House of Delegates also adopted a resolution providing for the selection of a place of meeting three years beyond the time of the selection.

The House of Delegates considered and adopted many and far-reaching resolutions. Several of the more important are as follows:

Approved the campaign against syphilis.

Stressed the value of preventive medicine.

Provided for the creation of a council on industrial health.

Defined "free choice of physicians" as applied to contract practice and so amended the principles of medical ethics.

Provided that appeals to the Judicial Council shall be perfected within six months.

Defined hospital care under group hospitalization contracts as to consist of room, bed, board, routine nursing care, and routine drugs only, excluding all medical care.

Called attention to the advantages in not overcrowding hospitals for mental diseases.

Provided that the staffs of hospitals approved for interne training shall be members of their county medical societies.

Urged the formation of a national department of health under one head, in which would be consolidated all the health activities of the government.

Adopted a resolution condemning the indiscriminate sale of the barbiturates.

Recommended that all county societies cooperate with rural organizations in providing good medical service to their respective communities.

Recommended that the American Medical Association establish a new council on industrial health to consider the ever-increasing phases of occupational diseases.

The Committee on Reapportionment in making their report stated that the maximum membership of the House of Delegates according to the by-laws is 175. In order that this number shall not be increased they recommended one delegate from state societies for each 825 members. This increased the New York delegation, a few states lost one delegate. The Tennessee delegation was not affected.

The New York resolution that was introduced by Dr. Kopetsky was highly socialistic and revolutionary and was replied to as follows by the Reference Committee to which it was referred after being introduced:

"*That*, whereas the medical profession had always been willing to give its services to the indigent, it recognizes that there is a group of citizens not indigent, and yet not competent financially to meet unusual medical costs and that the profession is willing to consider with other agencies ways and means of providing service and laboratory facilities for those not able to meet the full cost, but the problem is local and state and not federal. The willingness of the profession to adjust its services is not in any sense of the word to be construed as an endorsement of compulsory or voluntary health insurance as a means of meeting the situation. The facilities of the American Medical Association are placed at the disposal of the government or any qualified agency in an effort to work out a solution of difficulties."

Other new resolutions included recommending cooperation in securing drivers' licenses in various states so as to aid in the prevention of fatalities from motor accidents; encouragement of investigation of teaching of osteopathy by an unbiased, nonpartisan source; to the social security board that examinations for blindness be carried out only by doctors of medicine, competent in diagnosis and treatment of diseases of the eye; encouragement in the use of motion pictures in public and in medical education and for reviews and censorship of films used for advertising promotion; to the council on medication and hospitals for more extended inspection of hospitals.

The general scientific meetings commanded tremendous audiences as did the motion picture clinic on syphilis. More than 300 papers were read in the scientific sessions. The symposiums on neuropsychiatry, papers on the use of sulfanilamide, and meetings of many of the sections attracted capacity audiences.

The scientific exhibit has come to represent one of the most noteworthy of many extraordinary features of the annual session of the American Medical Association. A great many physicians spend their entire time during the week visiting these exhibits. The collections in this year's session were beyond any displays ever made in scientific value, appearance, attendance, quantity, arrangement, and in every other detail.

The following officers were elected:

President-elect—Dr. Irvin Abell, Louisville, Kentucky.

Vice-President—Dr. Junius B. Harris, California.

Secretary—Dr. Olin West, Chicago, Illinois.

Treasurer—Dr. Herman L. Kretschiner, Chicago, Illinois.

Speaker of House of Delegates—Dr. Nathan B. Van Etten, New York.

Vice-Speaker—Dr. H. H. Shoulders, Tennessee.

Next meeting place is San Francisco, California, June 13 to 17, 1938.

All delegates were present at every session and every executive session—100 per cent attendance by the three delegates.

In connection with the report of the delegates to the American Medical Association a motion passed requesting the delegates to make their report soon after the meeting of the American Medical Association and the editor to publish the report before it was submitted to the House of Delegates. Complying with this request the report of the delegates to the 1938 convention of the American Medical Association was published in the October issue (page 396).

The House recessed at 10:45.

WEDNESDAY AFTERNOON MEETING

Speaker Zemp called the House to order at 2:15 P.M.

REPORT OF CANCER COMMITTEE

Report was made by the chairman, Dr. Ralph H. Monger.

Four years ago the Cancer Committee outlined a program which consisted in the medical approach on the control of cancer by stimulating interest in cancer programs among physicians through distributing medical abstracts and reprints, publishing more articles in medical journals, arranging cancer programs for medical societies, encouraging greater emphasis on cancer in medical schools, and showing cancer films to medical groups. By the encouragement of the establishment of cancer clinics in hospitals, through the cooperation of hospital authorities and standardized by the American College of Surgeons. By the encouragement of postgraduate work among physicians, offering scholarships and fellowships to outstanding men and offering prizes to internes for best work on cancer. The committee also suggested a medical and lay approach by county societies appointing a committee to lecture to lay groups and when possible give radio talks.

This is only a part of the program outlined, but work has been done on this program. Through the American Society for the Control of Cancer thousands of abstracts and reprints have been distributed to the laity, especially women, which stressed the danger signals of cancer and urging them to consult their physician when any of these symptoms appeared. Last year this committee asked each county society to arrange for a cancer program each year in their society.

During the past year there have been several cancer clinics organized at some of the hospitals. These clinics are standardized according to the method suggested by the American College of Surgeons.

As far as is known there have been no scholarships or fellowships or any prizes offered to housemen for the best work done on cancer. However, if the larger general hospitals do organize cancer clinics in the near future this may be included in their program.

Inasmuch as the prevention of cancer at present is primarily educational we believe, as has been stated in previous reports, that there should be a speakers bureau of physicians created who are interested and willing to cooperate in this work.

The increasing mortality rate of this disease has caused the federal government to take action. This is evident from the recent passage in congress, without a dissenting vote, of an act to establish a national cancer institute. The act directs the surgeon general to conduct, assist, and foster researches, investigations, experiments, and studies relating to the cause, prevention, and methods of diagnosis and treatment of cancer. Authorization is given for $750,000 for institute buildings and $700,000 annually for researches without the curtailment of any other funds now used for cancer studies.

In the latter part of 1936 the American Society for the Control of Cancer started efforts to establish a nation-wide program of lay education on cancer. This was done by an organization known as the Women's Field Army. This organization is sponsored by the American Society for the Control of Cancer and the American Federation of Women's Clubs. It operates in its fight against cancer in complete cooperation with the reputable medical profession as represented by its national, state, and county units. It endeavors to acquaint the public with the true facts about cancer and hopes to offset as much as possible the vicious teachings of quackery that now exploit those who have, or think they have, cancer.

In 1937 only one week, March 21, was designated as Cancer Week. The State of Tennessee was slower in its organization than some of the other states and as a result we did not reach our quota. This state was asked to raise $2,000 and $1,400 of this amount was received. Last year there were thirty-five states organized in this campaign; this year there are forty-four states organized with a field army of more than 100,000 women enrolled.

Mrs. Rogers N. Herbert of Nashville is serving her second year as commander for Tennessee. She is very vitally interested in this work and has spent much time away from her family and home traveling over the state to organize each district. She has done an unusually good job, as evidenced by the fact that every district in this state is now organized. Instead of designating one week this year for Cancer Week, the entire month of April has been designated as Cancer Month. This has been proclaimed as such by President Roosevelt. The committee requested Governor Browning to do this for the state, but apparently this request was ignored.

We feel reasonably sure that the financial program will be a success and if we reach our quota this year with the nucleus we have to start with, and with this organization gaining momentum from year to year, then the financial outlook for work on this dread menace is very encouraging. This work is being done with the State Medical Society through its Cancer Committee. We have every reason to believe that it will be conducted on thoroughly orthodox lines and that it is deserving of our full support, including the supporting memberships that will be available to physicians.

Certainly any such endeavor to save human lives is worthy of the commendation and wholehearted support of the American people. It is our belief that the spreading of cancer information is a worthy public service in the participation of which all good American citizens may take great pride.

RALPH H. MONGER, Chairman.
JAMES W. McCLARAN.
H. S. SHOULDERS.
HOWARD KING.
E. J. SULLIVAN.
FRANK SMYTHE.

Cancer Control Society

Total amount collected and deposited in bank, including cancer drive for 1937		$1,407.94
Disbursements, 1937	$555.53	
Disbursements to March 31, 1938	144.87	
Bank balance as of April 12, 1938		$ 707.54

Disbursements as follows:

Stenographic Services	$ 90.00
Telephone Expense	27.57
Rent on Typewriter	7.50
Mrs. Herbert—Expense	9.80
Stamps	10.00
Total	$144.87

Report referred to Committee on Reports of Committees.

ADDRESS BY DR. ARTHUR W. ERSKINE

The speaker announced that a distinguished guest would be introduced by Dr. H. S. Shoulders.

DR. H. S. SHOULDERS: Mr. Speaker and Members of the House: In looking around for a speaker to talk to us this year on the subject of X-ray we chose one of the distinguished men of this country, or I might say of the world, to come and talk to us. He has already made three addresses, but he has consented to talk to you now. I had a long letter from Dr. Menville of New Orleans, who is editor of one of the leading X-ray journals of the world. He told me a lot about our distinguished guest, but I will not go into full details about that. He will tell you that Menville is all wrong; I am telling you that Menville is right. But it is now my pleasure and honor to introduce to this House Dr. Arthur W. Erskine of Cedar Rapids, Iowa, president-elect of the Iowa State Medical Association. (Applause.)

DR. ARTHUR W. ERSKINE: Mr. Speaker and Gentlemen: I shall not impose very long upon your time. I was asked to come down here to persuade Haggard to come out and talk to the Linn County Medical Society. Casparis is coming and we want Haggard to come, too, but he isn't here, he is up dr—or doing something on the mezzanine floor. (Laughter.)

I am tremendously honored and very much pleased to be invited to come down here. I think it is an honor for a country doctor to be permitted to address, as I was permitted to do this morning, an organization like the Tennessee State Medical Association.

I should like to say one word about this report which was just read to you by Dr. Monger. I have served on the Executive Committee of the Cancer Committee of the Iowa State Medical Society for four years, I think now, and I have also served on the Executive Board of the Iowa Division of the Women's Field Army. We planned, one and a half years before the Women's Field Army was organized, a dual campaign of lay and medical education, and because the Executive Committee, consisting of Platz of the University of Iowa, McNamara of Dubuque, and myself, were all situated in the eastern part of the State of Iowa, we had a chance to try, in a very modest way, a carefully-controlled plan of lay education. So in 1935, 1936, and 1937 there were a good many lectures given by the three of us and whatever people were sufficiently interested to contribute their efforts, mostly to women's organizations in eastern Iowa.

I know, of course, that there are some doctors who object to that sort of thing, who think that by telling women about the early signs of cancer, making women cancer-conscious, you create cancer phobiatics, and I suppose that may be true, that we do, perhaps, create a few cancer phobiatics. The answer to it is, of course, that if my wife can be saved by your being afraid, I am perfectly satisfied. We have had a chance to see what those lectures did. The twenty-one lectures that were given in Linn, which is my county; Cedar, which is the county southeast; and Jones, which is the county east, in 1936 resulted in at least thirty lives being almost certainly saved that would surely have been lost had it not been for the lectures.

I think there has never yet in the attack against cancer been a plan which offered as much chance, as great an opportunity to the medical profession, as this idea of the Women's Field Army, and I do hope that in Tennessee it will receive the active support of the medical profession.

As I said, I am tremendously pleased to be permitted to come here and talk so much. I have talked more than I ever have in my life, I think; I appreciate the honor and I have had a fine time. Thank you very much. (Applause.)

REPORT OF HOSPITAL COMMITTEE

Report was made by Dr. H. B. Everett.

House of Delegates of the Tennessee State Medical Association:

Your Hospital Committee wishes to make this report. Our chairman, Dr. Pickens, has been sick most of the year and has not been able to do much work on this subject. This report may not be as full as he would have made it.

We believe the hospitals of the state, as a rule, are well managed and give good service, but we believe that there are some improvements that can be made in the way of social service, as a number of people are obtaining free service at the free hospitals who should be paying for same, thereby imposing on the staff members to render the free service. We believe the staff meetings should discuss these matters more than the reading of scientific papers.

We also urge the reporting of nonmembers of the local society who are serving on staffs that are rated by the American Medical Association.

H. B. EVERETT.
E. G. WOOD.

DR. H. B. EVERETT: The other members of the committee have not seen this report since it was written and, therefore, have not signed it. We would be glad if they would sign the report before leaving, if they so desire.

Report referred to Committee on the Reports of Committees.

REPORT OF GRIEVANCE COMMITTEE

Report was made by the chairman, Dr. W. P. Wood.

The committee after careful review of both sides of the controversy agree that inasmuch as the essential parts of the principles and proposals, as outlined by the group, which were represented by Dr. Hugh J. Morgan, were presented to the House of Delegates of the American Medical Association at its meeting in June, 1937, and were rejected by the House of Delegates of the American Medical Association, and inasmuch as this group would not abide by the will of the majority of a democratic organization, which they admit is a democratic organization, therefore we recommend that this House sustain and endorse the action of the Board of Trustees of the Tennessee State Medical Association and the editor of the JOURNAL.

W. P. WOOD, M.D., Chairman.
J. R. THOMPSON, JR.
JAMES B. STANFORD.
HIRAM LAWS, JR.
JOHN S. FREEMAN.

Dr. J. W. McClaran moved the adoption of the report. The motion was duly seconded. Discussion by Drs. N. S. Shofner, Kyle Copenhaver, J. O. Manier, J. B. Stanford, C. M. Hamilton, Secretary Shoulders, E. G. Wood, A. F. Cooper, W. L. Williamson, the speaker, and H. B. Everett.

During the discussion the attention of the House was called to the fact that a newspaper reporter was present. A motion was made by E. G. Wood, seconded by H. B. Everett, that the House go into executive session. Before the vote the speaker said that such a motion, if carried, would exclude every one except the delegates, even Dr. Morgan.

The motion for executive session was put to a vote. The speaker then excused everybody except the delegates. Near the end of the discussion the speaker announced that Dr. Morgan requested to be heard again by the house.

It was moved by Kyle Copenhaver and seconded by H. B. Everett that the request be refused.

The motion was put to a vote and carried.

The original motion to adopt the report of the Grievance Committee was called for and put to a standing vote.

The speaker announced the vote of fifty for and three against the adoption of the report of the Grievance Committee.

Regular order of business then was resumed by motion made by E. G. Wood and seconded by L. S. Nease and adopted.

REPORT OF REFERENCE COMMITTEE ON REPORTS OF OFFICERS

The chairman, T. R. Ray, reported.

Your Committee on Reports of Officers have gone over all the reports submitted to us and present them with the following recommendations:

Treasurer's Report

First the report of the treasurer: We should like to say that this report is a complete audit of the financial affairs of this association, made by a reputable auditing concern. We have nothing to say but to commend this report and to recommend its adoption by the House.

Moved by W. B. Burns, seconded, put to a vote, and carried that the House adopt the report.

Report of Board of Trustees

DR. T. R. RAY: Next is the report of the Board of Trustees. This report was gone into very thoroughly by your committee; we heartily commend the activities of the Board of Trustees of this association for the past year, and we unequivocally recommend that the report of your trustees be approved as submitted by them.

Adoption moved by W. B. Burns, seconded, vote taken, and carried.

Report of Secretary-Editor

DR. T. R. RAY: The next report is the report of our secretary-editor. We have reviewed this report thoroughly and we want to commend our most excellent secretary for his untiring efforts; we commend him for the activities that he has exercised in the past year in behalf of the Tennessee State Medical Association and its JOURNAL and we respectfully recommend his report as read.

Adoption moved by W. B. Burns. Motion seconded and put to a vote and carried.

REPORT OF THE COMMITTEE ON REPORTS OF COMMITTEES

Report of P. G. Committee

DR. H. B. EVERETT: Mr. Speaker and Gentlemen of the House: Your Reference Committee on Reports of Standing Committees begs to submit the following report: First will be the committee's report on Postgraduate Instruction in Obstetrics. "We wish to commend the committee for their work on this subject; the report is well gotten up and shows that a large amount of work has been done by the committee. We recommend the adoption of the report, and urge all members to take advantage of all instruction by the committee and suggest that the committee be continued."

Adoption moved by H. B. Everett. Motion seconded, vote taken and carried.

DR. J. O. MANIER: There is one matter with reference to this report. We found that we got crossed up today. We have a Committee on Postgraduate Instruction and a Committee on Education. Apparently the chairmen of each of those committees thought that the other chairman was going to recommend certain things, which have not been covered in either report and which are absolutely necessary that this body take some action on if we are going to continue our present system of postgraduate instruction. Of course, the present Committee on Postgraduate Instruction goes to the first of the year. They see the present obstetrical setup through. If we are going to have an additional postgraduate course for the two years beginning in 1939, then we have got to seek our aid from the beneficent body that enabled us to put this course on within the next three weeks. They make their appropriations in the middle of May, and there is in none of these reports any allusion to the continuation of these courses, or if we continue them, in what form they shall be continued. I was asked by Dr. Reinberger, who could not be here, to bring this matter before you, and since we are pushed for time, the present existing Committee on Postgraduate Instruction wishes to place this matter before the House for its consideration.

Our advice to you, after studying one course, would be that certainly these courses should continue. At some of our meetings we have discussed what subjects should be recommended to you to be covered in the next course of postgraduate instruction. It was the opinion of your present Postgraduate Committee that pediatrics is the best course that we could try to put on next. Letters were sent out to men after they had taken the present course and suggestions asked for as to what course should be given next. I think internal medicine was requested by about 340 men and pediatrics by about 360. As I remember, those were approximately the figures, and some other courses were also requested.

After having handled this course which has gone over so darned well, we feel that it is going to be awfully hard for the next one to come up to scratch, and while, of course, ultimately we should look for a course in internal medicine, and I think there is no question that a course in internal medicine will be one of the most difficult ones you can select, internal medicine covers a wide range of subjects, and it will probably be much more difficult to select types of subjects to be covered which will attract universally as the subjects covered in the obstetrical course have.

I think it is highly sensible that this body do three things today: First, that you approve the continuance of postgraduate instruction under the kind of setup we have at present. I might say that we have had correspondence with the Commonwealth Fund, also with the Board of Health of Tennessee, and Vanderbilt and the University of Tennessee, the participating agencies. The local participating agencies have all assured their financial backing, and a letter from the Commonwealth Fund to all intents and purposes said that if we would furnish them a satisfactory setup and budget like we did before they would look at it very kindly.

The second thing that this House would have to do with respect to this would be to authorize the state society's appropriation of its quota of money for the conduct of the next course, and the third thing would be to instruct the Board of Trustees to set up at once a committee as machinery to deal with the Commonwealth Fund. I mean to try to get the money.

Many of us have felt this way in discussing it in my own Postgraduate Committee, that if you adopt the subject of pediatrics, in all probability and in all likelihood, there should be some change in the personnel of the committee. I mean as you go along. Very naturally I think it would be perfectly foolish to do away with the entire committee and lose all the experience they have, but if you are going to have a subject like pediatrics, more pediatricians ought to be brought into the committee than we have. I know there is no member of the present Postgraduate Committee who would not be happy to step aside, would really be very glad to do so, and permit some one else to come in.

I want to make a motion, Mr. Speaker, that this body go on record, just to start discussion, as approving first a second postgraduate course covering two years beginning in 1939, that it at once authorize the appropriation of the state society's quota toward putting that in force, and that it instruct the Board of Trustees to set up at once a committee to work out the details of this and particularly within the next three weeks to settle the affair with the Commonwealth Fund because they meet only in the middle of May and if you do not get the money then they do not meet until next May from the standpoint of allotting funds.

The motion was seconded.

The members of the committee accepted this as an amendment to their report.

A vote was taken and the motion carried.

STATE TUBERCULOSIS COMMITTEE

DR. H. B. EVERETT: Now, Mr. Speaker, we have a report on the State Tuberculosis Committee. "We recommend the adoption of the report as read, and that the committee suggested in the report be created." In other words, they suggested a special legislative committee to handle the matter of securing certain appropriations from the legislature to carry on their work.

I move you, Mr. Speaker, the adoption of this report.

The motion was seconded. Motion carried.

REPORT OF LIAISON COMMITTEE

DR. H. B. EVERETT: Next, Mr. Speaker, is the report on the report of the Liaison Committee. "We recommend the adoption of the report as read and that the committee continue their work as outlined in their report."

Mr. Speaker, I move the adoption of this report.

The motion was seconded. Motion carried.

REPORT OF COMMITTEE ON PUBLIC POLICY AND LEGISLATION

DR. H. B. EVERETT: Next, Mr. Speaker, is the report on the report of the Committee on Public Policy and Legislation. "We recommend the adoption of the report, and that the amendment to the Medical Practice Act be given preference over the basic science law, and that the Board of Trustees be requested to provide the necessary funds for the preparation and passage of the law at the next General Assembly."

Mr. Speaker, I move the adoption of the report.

The motion was seconded by Dr. L. S. Nease. Motion carried.

REPORT OF COMMITTEE OF MEDICAL EDUCATION

DR. H. B. EVERETT: Next is the report on the report of the Committee on Medical Education. "We recommend the adoption of the report as read."

Mr. Speaker, I move the adoption of the report.

The motion was seconded by Dr. L. S. Nease. Motion carried.

REPORT OF COMMITTEE ON INSURANCE

DR. H. B. EVERETT: Next is the report on the report of the Committee on Insurance. "We recommend the adoption of the report, and suggest that the membership be further contacted and the benefits of the policy explained to them. This probably could best be done by advertising in the JOURNAL."

Mr. Speaker, I move the adoption of the report.

The motion was seconded. Motion carried.

REPORT OF COMMITTEE ON MEDICAL DEFENSE

DR. H. B. EVERETT: Next, Mr. Speaker, is the report on the report of the Committee on Medical Defense. "We recommend the adoption of the report and the continuance of the committee until the cases before them are disposed of by the courts."

Mr. Speaker, I move the adoption of the report.

The motion was seconded. Motion carried.

REPORT OF COMMITTEE ON RESOLUTIONS

Dr. N. S. Shofner, chairman, reported no resolutions had been submitted to the committee. He had a memorandum beginning "The Committee on Nursing and Nursing Practice" which he moved be referred to the Legislative Committee.

Motion seconded by Dr. W. B. Burns. No discussion. Motion carried.

After discussion it was moved, seconded, and carried that the report of the Committee on Amendments to the Constitution and By-Laws be postponed until the Thursday morning meeting.

The meeting recessed at 3:30 P.M.

THURSDAY MORNING MEETING, APRIL 14, 1938

Speaker Zemp called the House to order at 9:15.

The first order of business was the election of officers.

Report of the Nominating Committee.

Dr. A. H. Lancaster reported for the committee.

Nominees for President—Dr. T. R. Barry, Knoxville; Dr. Reese Patterson, Knoxville; Dr. W. F. Christenberry, Knoxville.

Nominees for Vice-President—For East Tennessee, Dr. Wm. A. Garrett, Cleveland; for Middle Tennessee, Dr. W. S. Rude, Ridgetop; for West Tennessee, Dr. John Jackson, Dyer.

Nominee for Speaker of the House of Delegates —Dr. E. R. Zemp, Knoxville.

Nominee for Secretary-Editor—Dr. H. H. Shoulders, Nashville.

Nominee for Assistant Secretary-Editor—Dr. W. M. Hardy, Nashville.

Nominee for Trustee—Dr. Frank P. Bogart, Chattanooga.

Nominee for Delegate to the American Medical Association—Dr. H. H. Shoulders, Nashville.

Nominee for Alternate Delegate to the American Medical Association—Dr. J. O. Manier, Nashville.

After the committee's nominations for president, other nominations were called for. There being no nominations "offered from the floor," a motion was made to close the nominations.

Motion seconded, voted upon and carried.

A ballot was ordered for president. A count of the ballot showed that Dr. Thomas R. Barry had received a majority of the ballots cast.

The speaker then announced the election of Dr. Tom Barry.

After each committee nomination for each office was read from the floor, the opportunity was given by the speaker for every member to make additional nominations. In no case was any nomination made.

Nominations were closed by motion. Each nominee, as listed above, was elected.

NEXT MEETING PLACE

An invitation to meet in 1939 at Jackson was extended by Drs. J. W. McClaran and Jere Crook, representing the Madison County Medical Society. Dr. A. F. Cooper extended the invitation of the Shelby County Medical Society to meet in Memphis.

Dr. H. H. Shoulders read some telegrams from Jackson and Memphis, urging the association to accept the invitations already extended.

A ballot resulted in the selection of Jackson as the meeting place for 1939.

Speaker Zemp appointed Dr. J. O. Manier and Dr. Williamson to notify Dr. Barry of his election as president.

President Barry was then introduced by Dr. J. O. Manier and briefly expressed appreciation for the honor conferred on him.

Drs. H. A. Laws, Jr., and Williamson were appointed to escort the new president to the assembly.

COMMITTEE ON AMENDMENTS TO CONSTITUTION AND BY-LAWS

Chairman J. O. Manier read the amendment as proposed last year. The amendment is as follows:

"Article VIII. Section 1: The officers of the association shall be a president, a vice-president of the three grand divisions of the state, a secretary, eight trustees, ten councilors, and a speaker of the House of Delegates. The retiring president and the speaker of the House of Delegates shall be trustees, and two trustees shall be elected from each of the grand divisions of the state. The trustees shall elect one of their number annually as the treasurer of the association. One councilor shall be elected from each congressional district.

"Section 2: The president, three vice-presidents, the speaker of the House of Delegates, and the secretary shall be elected annually for three years. Five councilors shall be elected annually for two years."

That is practically the same as our now existing constitution and by-laws.

"Article IX. Section 1: The Board of Trustees, composed of the retiring president, the speaker of the House of Delegates, and the six members of this association elected as heretofore provided, shall select its own chairman who shall be ex-officio treasurer of this association. The trustees shall have entire control of the publication, the policy, and the editorial and financial management of the JOURNAL of the association. It shall be authorized and employed to make all contracts necessary for the conduct of the association."

That, at some length, is the proposed amendment, and as I recall, the only real change it makes is to increase your elective members to the Board of Trustees from three to six. The present Board of Trustees is composed of the three elected members, one from each grand division, plus the speaker of the House of Delegates and the retiring president. This amendment would increase the elective members from one from each grand division to two from each grand division.

Your committee has considered this amendment and can see no particular advantage that additional elective members would add to the proper functioning of the Board of Trustees, and it would, of course, entail some minor traveling expense if you increase the number. We, therefore, report this proposed amendment back to you, advising its rejection.

Dr. J. W. McClaran moved that the amendment be rejected. Motion seconded.

The motion was discussed at length by Dr. S. R. Miller, Dr. J. B. Stanford, Secretary Shoulders, Speaker Zemp, Dr. C. M. Hamilton, Dr. H. B. Everett, Dr. W. B. Burns, Dr. W. L. Williamson, Dr. W. J. McClaran, Dr. J. O. Manier, Dr. W. P. Wood, Dr. Franklin P. Bogart, and Dr. J. R. Thompson.

The speaker put the question on the adoption of the report of the committee. On viva voce vote the report of the committee was adopted.

The speaker announced the amendments are rejected.

The result of the discussion was passing an amended motion to the effect that the retiring president, the Board of Trustees, the speaker of the House of Delegates, and the secretary-editor be empowered to change or to rewrite whatever has to be done to the constitution and by-laws to get them in shape so that we will know where we are.

The motion was made by Dr. W. P. Wood and seconded by Dr. Hiram A. Laws, Jr. The amendment, offered by the secretary, was acceptable to the maker of the motion. The amendment directed the committee to make the changes conform to actions of the House. In other words, they would not be at liberty to change them in any other particular than those indicated by actions of the House as shown in these minutes.

These officers, as designated, are to constitute a committee to file for a charter and that they make the charter provisions conform to the actions of the House of Delegates.

Past President George Williamson was presented to the House and thanked the members for their cooperation during the year.

"The Birth of a Child"

Dr. E. H. Baird asked for an expression of the House approving or disapproving the showing of "The Birth of a Child" in theaters and to medical societies.

Dr. H. B. Everett moved "that we do not approve of this picture being shown to lay audiences in theaters."

Seconded by Dr. Jas. W. McClaran. Discussed by Drs. Reinberger, Everett, and McClaran. Dr. M. S. Roberts offered an amendment "that the picture be approved for the medical profession only." Amendment accepted by Dr. H. B. Everett. Upon a vote the motion carried.

Mention was made of the altruistic motives which prompted Mead Johnson & Company to produce the picture and to allow it to be shown only with the consent of the State Medical Society.

Dr. Hiram A. Laws, Jr., moved "that the House thank Mead Johnson & Company for presenting the picture at this meeting." Seconded by Dr. H. B. Everett. Motion carried.

THANKS TO HOST SOCIETY

Dr. H. B. Everett offered a motion thanking the Nashville Academy of Medicine and the Davidson County Medical Society for their most elaborate entertainment. Motion seconded and carried on a rising vote.

Dr. J. W. McClaran moved to adjourn. Seconded and carried.

Adjourned at 10:15.

PROCEEDINGS OF THE SPECIAL SESSION OF THE HOUSE OF DELEGATES OF THE TENNESSEE STATE MEDICAL ASSOCIATION, NOEL HOTEL

SEPTEMBER 4, 1938

Meeting was convened at 10:00 A.M.

In the absence of Speaker E. R. Zemp, Dr. S. R. Miller moved that Dr. W. D. Haggard act as temporary chairman.

Motion seconded and vote was taken. Motion carried.

Dr. Haggard took the chair and called the meeting to order.

Assistant Secretary W. M. Hardy called the roll of delegates. Sixty-nine delegates answered present. This being a quorum, the House was declared open for the transaction of business.

Dr. H. B. Everett moved that the roll as called constitute the House of Delegates for this special session.

Motion seconded and passed.

Dr. Hiram A. Laws moved that only delegates and members of the association be permitted to remain in the room.

Motion seconded and passed.

At the request of Chairman Haggard, Secretary Shoulders stated the purpose of the call.

To the Members of the House of Delegates of the Tennessee State Medical Association:

You are hereby called to meet in special session on Sunday, September 4, 1938, at 10:00 A.M., in the air-conditioned assembly room of the Noel Hotel, Nashville, Tennessee.

The purpose of the meeting is to discuss propositions that may come before the House of Delegates of the American Medical Association which is to meet in Chicago on September 16.

The principal subject to be discussed in Chicago is the question considered by the National Health Conference held in July in Washington.

We believe that this meeting is of vital interest to every member of the medical profession and that no delegate should be absent. Kindly notify the office of the secretary, 508 Doctors' Building, Nashville, that you will be present.

Very truly yours,
TOM R. BARRY, M.D., President.

P. S.—A copy of this letter is being sent to the president and secretary of each county medical society for their information.

A motion was made, seconded and passed that Secretary Shoulders read a plan which he had written for financing the medical care of indigent citizens by the federal government.

Before reading the plan Dr. Shoulders said that if the House saw "fit to adopt it as your plan and instruct your delegates to present it, I want my name stricken from it and it will go as the plan from the State of Tennessee."

(This plan as read and later adopted was published in the October issue of the JOURNAL, page 404.)

During the reading of this plan Speaker Zemp arrived. Dr. Haggard then relinquished the chair to Dr. Zemp.

Dr. J. O. Manier moved that a committee be appointed to bring in recommendations to the House.

Motion seconded and passed.

An effort was made to appoint a committee representing all sections of the state and all branches of medicine.

Those named were:

Dr. J. O. Manier, Chairman, Nashville.
Dr. W. L. Williamson, Memphis.
Dr. A. M. Patterson, Chattanooga.
Dr. Kyle C. Copenhaver, Knoxville.
Dr. H. L. Monroe, Erwin.
Dr. D. M. Cowgill, Madisonville.
Dr. C. F. N. Schram, Kingsport.
Dr. W. L. Sumner, Ridgley.
Dr. J. U. Speer, Pulaski.
Dr. D. B. Andrews, Columbia.

A general discussion of the plan as read followed, during part of which time the committee remained in the House.

Those participating in the discussion were: Drs. W. C. Bilbro, W. D. Haggard, H. H. Shoulders, E. R. Zemp, Franklin Bogart, Jere Crook, William Garrett, Frank Dunklin, John B. Steele, D. W. Smith, S. R. Miller, A. F. Richards, A. F. Cooper, John Jackson, W. P. Wood, and George Williamson.

The committee submitted the following resolution for the consideration of the House, Dr. J. O. Manier reading:

"Your committee has met and considered the various matters which were laid before it. There is very little difference of opinion among the committee. Perfectly naturally, there was the possibility that the wording of some sentence or sentences might be construed by one man to mean one thing and by another man to mean another thing, generally speaking. The committee begs leave to present the following resolution:

"*Whereas* a call has been issued for a special session of the House of Delegates of the American Medical Association to be held in Chicago September 16, and

"*Whereas* the subjects for consideration at the special session are to be the 'National Health Program' submitted to the National Health Conference recently held in Washington, and to such other matters as may be submitted to the House of Delegates by the Board of Trustees, and

"*Whereas* a special meeting of the House of Delegates of the Tennessee State Medical Association for the purpose of considering such matters as may properly be considered to the end that the delegates of the Tennessee State Medical Association may receive instructions, in so far as possible, as to what their actions shall be in the sessions of the extraordinary session of the House of Delegates of the American Medical Association;

"*Therefore Be It Resolved*, That the delegates from the Tennessee State Medical Association to the American Medical Association be instructed as follows:

"First: That while the National Health Program above referred to contains statements of objectives to which all mankind agrees, we instruct our delegates to oppose the plan as a whole and each of its various parts for the reason that its adoption as a governmental policy would tend toward and eventually accomplish the establishment of a communistic form of medical practice for the care of the people of the United States.

"Second: *Be It Further Resolved*, That the delegates from Tennessee be instructed to present to the House of Delegates of the American Medical Association the proposal adopted by the House of Delegates of the Tennessee State Medical Association hereto attached and made a part of this resolution. This proposal, in our opinion, would accomplish all the laudable objectives mentioned in the National Health Program above referred to and avoid the establishment in the United States of a communistic form of medical practice.

"*Be It Further Resolved*, That the delegates from the Tennessee State Medical Association be instructed to oppose all plans and proposals which involve the surrender of the right of a sick person whether indigent or not, to select his doctor, or invest in any governmental agency or in any institution in the United States, the powers which no agency having to do with medical care should possess; that is, powers to allocate public funds or withhold the allocation of such funds intended to be appropriated for expenditure in medical care, or powers to make regulations which might have the effect of interfering with the liberties of patients mentioned above in the selection of their doctor."

Mr. Speaker, as chairman of the committee, I wish to move the adoption of the resolution.

Motion was seconded.

Dr. Hiram A. Laws, Jr., Kyle Copenhaver, and Franklin Bogart discussed the report.

The question was put to a vote, all votes in the affirmative except two.

RESIGNATION OF ALTERNATE TO A. M. A.

Dr. J. O. Manier then submitted his resignation as alternate delegate to the American Medical Association.

Motion to accept the resignation of Dr. Manier was made by Dr. Kyle Copenhaver, seconded and adopted.

ELECTION OF ALTERNATE TO A. M. A.

Dr. J. O. Manier then nominated Dr. W. D. Haggard to succeed him as alternate delegate to the American Medical Association.

Dr. Copenhaver moved that nominations be closed and that Dr. Haggard be elected by acclamation.

Motion seconded and put to vote and carried. Dr. Haggard was declared elected.

Nominees for State Board of Health

Secretary Shoulders stated that the House in regular session in April did not submit a list of nominations to the governor from which members of the State Board of Health were to be selected.

It was moved, seconded, and adopted that the Board of Trustees be instructed to submit a list of nominees to Governor Browning.

DR. T. RAY: The motion adopted by this House of Delegates places it on record favoring a plan promulgated by the secretary of this society. It is perfectly natural that he being speaker of the House of Delegates would not have a plan going before the House as his plan, but I feel that the Medical Society of Tennessee should give some recognition to Dr. Shoulders for presenting this plan. I move you that the House of Delegates express its appreciation to Dr. Shoulders for presenting this plan.

(Which motion was duly seconded and passed.)

Dr. E. G. Wood moved and Dr. H. B. Everett seconded a motion to the effect that a copy of the Tennessee plan be sent to every member of the House of Delegates of the American Medical Association.

Motion carried.

LETTER FROM HOSPITAL ASSOCIATION

Dr. C. F. N. Schram of Kingsport read a letter from Mr. Eustler of the Hospital Association of Tennessee with a request that the communication be filed with the minutes of the meeting and to be considered by a committee of the house.

Motion made, seconded and carried.

The letter and enclosures were referred to the Hospital Committee.

Speaker Zemp thanked the members present for their careful consideration of questions brought before the House.

There being no further business the House was declared adjourned by the speaker.

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INDEX TO MINUTES

An effort has been made to index the minutes so as to give ready reference to any subject.

It is necessary for the reader to bear in mind the procedure followed by the house in the transaction of business.

Five different reference committees are appointed by the speaker to consider business and to make recommendations to the house. This applies to old as well as new business.

An officer or chairman of a committee makes his report; this report is referred to a Reference Committee. The Reference Committee makes its report and recommendations. This is followed by discussion, if any, and then the house takes action by vote. A resolution takes a similiar course.

The reader will find the various reports and resolutions indexed as such. The minutes show the reference committee to which each report, or resolution, was referred. The index also shows the page on which the report of each reference committee may be found. In connection with this report the action taken by the house will be found.

TWO YEARS OF POSTGRADUATE TEACHING IN TENNESSEE

FRANK E. WHITACRE, M.D., Instructor, Postgraduate Instruction in Obstetrics

THIS MONTH marks the close of the first effort in medical postgraduate education of the circuit plan in the State of Tennessee. This idea has been carried out elsewhere with varying degrees of success in Pennsylvania, North Carolina, Mississippi, Virginia, and Oklahoma. Many other states have definite programs for short courses of usually four weeks' duration in various medical subjects.

The State Medical Association of Tennessee planned for years to do something of this nature, and therefore appointed a committee on postgraduate instruction. Contributing agencies have been the Tennessee State Medical Association, Vanderbilt School of Medicine, University of Tennessee School of Medicine, State Department of Health, and a generous contribution from the Commonwealth Fund of New York. Mr. L. W. Kibler of Oklahoma was employed as field organizer and Dr. Frank E. Whitacre of the University of Chicago was secured as instructor.

In spite of the creditable courses in postgraduate teaching available to a few in some medical centers, it is impossible for the average man in general practice to keep pace with the trend of medical progress. For the few fortunate who are able to leave their practice and take advantage of these courses in medical centers, such courses have been successful, but for the majority the plan is difficult or impossible and very expensive. The object of this plan has been to reach the greatest number of physicians possible and bring to them for a nominal fee a postgraduate course which compares favorably with instruction over the same period of time received in regular medical centers without the loss of time and income of practice occasioned by leaving their own community.

The subject of obstetrics was selected as that most needed because the problems of obstetrics present themselves repeatedly to every man in general practice. The treatment of some of these conditions has changed materially in the past several years and many doctors had already expressed a desire for a course in obstetrics. The plan was then to present the subject of obstetrics and allied gynecological conditions in a series of ten lectures and demonstrations in selected centers which would be reachable to all doctors in the state.

Tennessee was arbitrarily divided into nine districts. In each district five centers were established. Certificates of attendance have been issued by the committee to those doctors who were present at eighty per cent or more of the lectures. Lectures were followed or preceded by clinical demonstrations. In addition doctors were encouraged to request consultations on their private cases. It is a fact that methods of diagnosis are often not well understood, and that many times the habit of making a guess in diagnosis and then hoping for the best can be eliminated by methods of examination and sometimes laboratory procedures. An effort was made to eliminate all unnecessary laboratory procedures and to treat complications with the things that one has on hand in the most isolated rural communities. The value of records in obstetrics was emphasized repeatedly and a generous supply of simple prenatal cards was given to every physician enrolled. Also an effort was made to standardize equipment for home delivery which would include provisions for the treatment of the common and unpredictable complications.

Some doctors may take exception as to the value of talks to the laity and in general they may be right, but as regards obstetrics instruction to the public is of great value. It is obvious, considering the causes of maternal deaths and investigating individual cases, that often the death resulted from disinterest or ignorance on the part of the public or patient. Especially in cases of eclampsia and hemorrhage, it makes little difference in the end results, even when a man is excellently equipped to take care of the complication, if he has had no opportunity to see the patient until she is in hopeless condition. The number of invitations for speaking engagements to women's clubs, parent-teacher associations, and especially the girls of high-school age were gratifying, and these groups were told of the causes and methods of prevention of maternal deaths. In this way more than 9,000 women in Tennessee have received instruction on this subject. This has been supported by frequent mention in the press. The general public is not likely to read books on the subject and only in this way is it possible to arouse interest—to make the public prenatal-minded. Although this is only the first step prenatal care will come into its own and regular visits to the doctor during pregnancy will naturally result. In this regard Tennessee may well consider herself a pioneer.

The problem of much-needed instruction to colored doctors was not overlooked. In most centers they attended the regular meetings. While in Memphis, Jackson, Nashville, and Chattanooga the number of colored doctors made special courses for them necessary.

Statistical Results of the Course

Number circuits	9
Number teaching centers	44
Number colored teaching centers	4
Number counties included to date	95
Number paid enrollments to date	1,334
Number private consultations with doctors	523
Average attendance by doctors, all circuits	80%
Number communities receiving lay lectures	61
Number lay lectures	76
Number laity attending	9,278

To Accomplish Program to Date

Number miles traveled by instructor	51,000
Number miles traveled by field director	53,480
Total number miles traveled	104,480

At this time one cannot state the degree of success of this course. That answer lies with the doctors who have taken part in the course. The enthusiasm with which this course has been received is illustrated by the fact that in a state where the membership of the State Medical Association numbers 1,642 that 1,334 were regularly enrolled in this course for an average attendance of eighty per cent which has set a record in postgraduate teaching of this type in this country.

At the present plans are well advanced to present a course in pediatrics beginning January 1. The plan of teaching will be much the same and it is hoped that this second attempt will enjoy the same interest, loyalty, and support from the profession that has been apparent in the first course.

REPORT OF SPECIAL COMMITTEE APPOINTED ON AUTHORIZATION OF THE HOUSE OF DELEGATES OF THE AMERICAN MEDICAL ASSOCIATION TO CONFER WITH REPRESENTATIVES OF THE FEDERAL GOVERNMENT

THE FOLLOWING is a statement made by Dr. Irvin Abell, president of the American Medical Association and chairman of the special committee above named:

The committee appointed at the special session of the House of Delegates on September 17 to confer and consult with the proper federal representatives relative to the proposed national health program assembled in Washington on October 30. The full membership of the committee, comprising Drs. Abell, Luce, Donaldson, Vest, Sondern, Rankin, and Cary, with Drs. West, Sleyster, Woodward, and Leland and Mr. Laux carefully reviewed and considered the reports of the five reference committees individually, together with the final report of the general reference committee as adopted by the House of Delegates, with a view to their proper and accurate presentation to the federal representatives.

The conference was held in the Labor Building on Monday, October 31, beginning at 10 A.M. and lasting until 7 P.M. with a recess of one hour for lunch. The federal representatives comprised the membership of the interdepartmental committee and its technical committee on medical care with the addition of Drs. Parran and Bishop. It was decided that the discussion be informal and that no stenographic record be made. It was suggested by Miss Roche that we present the action of the House of Delegates with such comments as we desired. The chairman, Dr. Abell, then requested the chairman of each of the five divisions of the reference committee to read in turn the division reports, making it clear to the conference that these reports as such had not been passed on by the House of Delegates, but served as a basis of discussion and action by the general reference committee. At the conclusion of the reading of each division report, the final action of the House on each of the recommendations contained in the proposed national health program was given by the chairman of the general reference committee, Dr. Donaldson, and each of five recommendations or proposals was discussed separately. The discussions were held largely to principles, but little if any consideration being given to the methods of translating into action the recommendations of the interdepartmental committee.

Recommendation I on expansion of public health services elicited but little discussion. No comment was made by the federal representatives on our recommendation of the establishment of a federal department of health. Our committee made our position clear regarding opposition to the inclusion of the treatment of disease in this category except where this cannot be accomplished through the private practitioner. The federal representatives expressed no opposition to this attitude.

Recommendation II on expansion of hospital facilities brought out an active discussion in which the discrepancies between the statistics and data assembled by the technical committee and those assembled by the American Medical Association were forcefully brought to the attention of the conference. It was finally suggested that Dr. Mountain of the technical committee and Drs. Leland and Cutter confer with a view to the adoption of uniform or similar methods in estimating the present facilities available and if possible of reconciling existing differences. The technical committee stressed the problem of standards to be adopted, particularly in utilizing the smaller hospitals in rural communities where the facilities afforded by them are or might be considered inadequate, both from a standpoint of hospital service and of professional personnel. No final solution was reached, but it was agreed by all that standards compatible with good service, both hospital and professional, should be maintained and that these would of necessity vary with location, size, and character of service to be rendered. The present number of bed vacancies and the geographical distribution of such vacancies was considered in relation to the utilization of existing hospitals. It was agreed by all that the building of additional hospitals should be solely on a basis of need. That the suggested figure of 4.5 hospital beds per thousand of population represents a ratio of hospital needs was not accepted by our committee. The question of perpetuation of newly-built hospitals and of securing competent staffs was not satisfactorily answered; the federal representatives propose a subsidy for such hospitals for a period of three years, after which support is to be derived from local patronage and agencies. That rural and sparsely-settled communities will be able to assume this responsibility is open to question. The estimate of beds for the tuberculous on the basis of two beds for each death from the disease elicited a full discussion, it being pointed out that the needs vary both geographically and racially, and that a ten-year building program based on present mortality may prove entirely too large in the face of rapidly improving methods of treatment with consequent reduction in time required for hospitalization. The discussion of diagnostic centers brought out the proposed cost of each to be $30,000, the equipment to include facilities for special treatments not now available in sparsely-settled communities. This would indicate that such contemplated centers are to be both diagnostic and treatment with the difficulties of perpetuation and personnel to be solved by the joint efforts of local, state, and federal agencies.

Under Recommendation III on medical care for the medically needy our committee called attention to the many experimental plans that have been and are being tried by the component units of the American Medical Association. The Pennsylvania plan was explained in detail by Dr. Donaldson and elicited discussion on the relative merits of administration of such plans under the direction of welfare agencies, health councils, and health departments. While no one plan was recommended for adoption by either committee, the impression was gained that the technical committee regards the health departments as the central agency around which such plans should be developed. It was pointed out by our committee that the patients to be served under this recommendation do not under the present system of practice avail themselves of the services offered, and it was emphasized that further provision of services should be arranged by responsible local public officials in cooperation with the local medical profession and its allied groups.

The discussion of Recommendation IV on a general program of medical care brought out the controversial principles between the two committees relating to sickness insurance, voluntary and compulsory. Drs. Woodward and Leland and Mr. Laux largely carried our side of the discussion because of their familiarity with the points at issue. The many phases of voluntary insurance covering both hospital and medical service were presented by them and the preference of such to the compulsory type was strongly urged by all the members of our committee. The House of Delegates' report which "recognizes the soundness of the principles of workmen's compensation laws and recommends the expansion of such legislation to provide for meeting the cost of illness sustained as a result of employment in industry" was used by Mr. Falk in propounding a question difficult of answering to the satisfaction of the technical committee; namely, whether or not any difference exists between the acceptance by doctors of pay for service from compensation boards and acceptance of pay by them from a governmental, tax-supported agency with free choice of physician allowed. The presentation of the fact that the compensation laws were designed to make industry carry the burdens of illness and injury incidental to its operations did not serve as a satisfactory answer to his question and possibly left him with the best of the argument. The technical committee stated that the group between the indigent and financially competent classes was urging the provision of medical service to which it could contribute to its financial support, the inference being that compulsory insurance would enable it to budget sickness costs. Dr. Cary made a tactfully worded appeal that the success of the entire program be not endangered by alienating the support of the medical profession in insisting on compulsory insurance. The end of the argument and discussion apparently left both committees occupying the same positions as at the start.

Recommendation V on insurance against loss of wages during sickness occasioned little or no discussion.

The reception accorded our committee was quite friendly and the discussions evinced the same spirit on both sides. They were fruitful in bringing out a better understanding of opposing points of view and in focusing attention on the discrepancies in data and statistics on which such points of view are founded. While tentative agreement in principle, not in methods of application, was reached on four of the recommendations, the conference was stymied by the question of compulsory sickness insurance. The interdepartmental committee is to hold conferences with representatives of other groups, notably the American Public Health Association, the American Dental Association, the American Hospital Association, the American Nursing Association. It was suggested that our committee return at a later date for further conference presumably after the above-named organizations, through their representatives, have had opportunity to express their views. If this invitation is accepted, an early date was suggested as the interdepartmental committee will prepare its report to be submitted to the president at the opening of the congress when its recommendations may be embodied in proposed legislation.

THE DOCTOR AT THE CROSSROADS

Physicians Must Be Aroused from Their Civic Adolescence

DR. NATHAN B. VAN ETTEN, New York City

Former Speaker of the House of Delegates of the American Medical Association
An Address before Kings County Medical Society, Brooklyn, New York, October 18, 1938

"MEDICAL service for all Americans" demands the propagandist for government administration and supports his thesis by claiming that medical service is neither available nor willingly given.

The medical profession denies the truth of both of these statements.

The profession is numerically ample, its generosity is traditional, and approximately twenty per cent of all hospital beds are unoccupied.

Medical service for all the people has long been an objective of the American Medical Association.

Better medicine through better educated physicians is constantly studied by its councils. The Council on Medical Education and Hospitals promotes these ideals every day in the year.

There are people who have no medical care—there are people who do not seek medical care—there are others who object to medical care and there are sick people who do not know how to find medical care; these people must be surrounded by the protecting arms of the public health service.

The medical profession makes no claim to flawless service, but it is most unfair to claim that no progressive effort is being made to improve it.

Postgraduate education is offered to the physician at teaching centers and is also carried to him in the country, in the belief that his education must go on as long as he lives—not only in the interest of sick individuals, but in the interest of every citizen of the country.

There has never been a time of greater need for leaders. There should arise in every part of our country men filled with the consciousness of the importance of furnishing better medical service to the American people.

The medical profession must not rest upon the laurels of accomplishment. The fact that our medical service is said to be the best in the world does not justify relaxation of efforts to make it better.

Clinical students, research students, and students of social philosophy must continue to pursue the elusive secrets of pathology, and at the same time apply themselves to broad practical application of their knowledge to the improvement of the public health. Raising the cultural levels of science is no more important than raising the levels of social intelligence.

The American Medical Association has been reviled as reactionary—static and obstructive of social progress. If these criticisms are valid the responsibility lies with the whole medical profession.

If American medicine is to go forward it must welcome constructive criticism from whatever source—and every physician must be encouraged to express himself in the meetings of his county medical society where he will be heard.

Some of the criticism from within the profession seems to have come from physicians who chose to ignore this procedure and sent their complaints through the public press. Criticism from without seems to have come from politically-minded people who style themselves experts in social philosophy. It is believed that few of them have had bedside experience.

The fact that most of the 110,000 members of the American Medical Association are trying to take care of sick people does not absolve them from valid charges that they are failing to take an active interest in broader fields of medical service.

How can this interest be stimulated? How many physicians are informed about the progressive work of their delegates at the recent special session in Chicago? How many have read the minutes published in the *Journal* of September 24? How many physicians read anything in their journals besides the articles which discuss the special problems which confront them in their practice? How many physicians read their journals at all?

The physician reads his local newspaper and finds himself accused of something akin to criminal negligence. He senses a crisis in his professional life. Where shall he go from here?

He sits at the crossroads in great perplexity. He reviews with satisfaction his evolution from the days when he was a barber or a servant of a wealthy patron up to the time when he became licensed by society to practice healing arts and recognized and respected because of his knowledge and ability.

Introspectively he is sorry for himself. His self-esteem has been hurt by investigative research and criticism of his effectiveness not only as a social agent, but as a technician.

His education has been criticized, even his character has been assailed.

He has heard himself branded as reactionary, as a merchant of health, as a Robin Hood, as a dishonest fee splitter, as a criminal abortionist or as a cheater of insurance companies. His ethics have been reviled as mere facades. He is unhappy because his income is shrinking while he sees unnecessary invasion of his field by government agencies.

If he is an average man he realizes that competition at his own level is unnecessarily severe because too many are permitted to divide his opportunity. In spite of all such discouragement he is generally ethical and seldom yields to temptations to escape from his distress by devious paths. He is still a member of the society of educated gentlemen and he tries to justify himself.

He knows that the practice of medicine has greatly changed in the last twenty years. Preventive medicine has largely eliminated diseases which formerly absorbed much of his effort, and whether he likes it or not he must cultivate new fields. He knows the biological results will always create new problems.

Adolescence and senescence and casualties and malignancies will continue to engage his earnest thought, but his major function may possibly lie along the lines of education. Life has been externalized by science which has progressed from one objective revelation to another. Standards of living are constantly changing and challenge deliberation. The doctor must not only study constantly to understand them and their effect upon the health of our citizens, but he must prepare himself for leadership of social currents so that they may become assets instead of perils to our civilization.

In the presence of the greatest literacy ever known health education may be expected to have increasing value, perhaps it has, but the great American dream is luxurious living, constantly inspired by cheap promotion. Youth is fascinated by glamorous prospects, succumbs to salesmanship which urges pleasure as an immediate objective. Health means nothing until it is lost. Some people are talking about the man of tomorrow, that man is the doctor's job. He is his job for biological reasons to keep him fit for tomorrow, he must be educated, he must be taught to protect himself from infection and from early senescence. It is the doctor's job to rise from his contemplative seat at the crossroads and to keep himself actively organized for the protection of the public from false ideas, it is his job to educate himself not only in the field of preventive medicine, but in efficient citizenship.

In his great Phi Beta Kappa oration, Alexis Carrel urges the promotion of "a center of synthetic thought, a focus of collective investigation of human problems. In fact, into an institute for the construction of the civilized.

"Is it not more important to improve man than the goods consumed by him?" he insists. "Are health and comfort of any value if we become mentally and spiritually worthless? Those who have given their lives to the search for the prevention and cure of disease are keenly disappointed in observing that their efforts have resulted in a large number of healthy defectives, healthy lunatics and healthy criminals. And in no progress of man.

"As far as I am concerned," Dr. Carrel concluded, "I intend to devote the rest of my life to the problem of developing man in his organic and spiritual entirety. For the quality of life is more important than life itself. We must now use theoretical and applied science, not for the satisfaction of curiosity, but for the betterment of the self and for the construction of truly civilized man."

Will the physician at the crossroads respond to such a stimulus? The fact that more than half of the million hospital beds in the United States are occupied by insane patients is a challenge to every doctor in the land.

The hesitant doctor looks back upon the long uphill road which he has climbed, he looks ahead and sees only more difficult heights, he looks down into a valley of indecision. Will he slip into decadence or will he become a fighter for whatever he thinks is right?

The relation of the physician to society assumes acute importance in the presence of experimentation under the aegis of social security. Extraordinary political changes in every part of the world, reversion in many countries from democracy to autocracy, tendencies to centralization of authority in the United States, and submergence of the individual in mass movements cannot fail to disturb practitioners of medicine who have been developed under the American tradition. American physicians must assume social leadership if they would avoid the roles of pawns in the hands of those who are playing the games of political strategy. Membership in a profession seems to have been regarded as an insulation against extraprofessional contacts. Preoccupation with scientific interests has erected barriers to civic interest. Physicians have been called poor businessmen, impractical idealists. Their sentimentalism has been exploited by professional welfare organizations. Without the gratuitous service of the doctor many of these organizations would fail. So-called philanthropy is not dependable, but the physician will always work for the pay of experience, for the pay of prestige, for the pay of applause from the day of his graduation until the end of his life, probably always hoping that fortuitous circumstance will send him wealthy patients whose gratitude may assume a really valuable material expression. The physician himself is chiefly responsible for his precarious position. He has been so busy in his own kitchen garden that he has seldom looked upon the fields outside.

American physicians face problems which seemingly new are almost invariably old enemies in new clothes. Old world experience should be studied by the lamps of history and lessons applied by intelligent, militant physicians who are willing, if necessary, to become crusaders. Physicians will become effective only when they stand upon their own solid ethical foundations, and become civically conscious.

The physician is often the priestly guide, counselor and friend and confessor. To fill such demands he must, himself, possess moral quality, and educated intelligence. No one should enter the practice of medicine with the sole idea of being gainfully employed. Very few acquire wealth through the medium of medical practice. Many fail because they cannot fit themselves into a sympathetic social environment, are not real students of human beings as individual personalities, or are indolent, or have not the moral fibre to preserve their rectitude inviolate under the seductions of expediency.

Organized medicine is not a trade union. Physicians are not selling commodities in competition with other merchants. They are not merchants of health, selling cures, or formulae, or medicines, or instruments. Physicians are professionals giving service for which they may or may not be paid, and they must expect to give it regardless of fee. They are the privileged servants of the sick, and being obligated by an oath must carry themselves on loftier planes than those who buy and sell for profit.

The practice of medicine is concerned with three classes of people—the indigent, the large middle class, and a small group of people who may be called independently well-to-do.

All these people are better cared for in the United States than anywhere else.

A medical profession which includes large numbers of keen students has furnished striking advances in the last twenty-five years. Medicine has made extraordinary strides in epidemiology, in the therapy of diabetes, in the therapy of anaemia, in the therapy of orthopedics, in brain surgery, in chest surgery, in radiation therapy. Scientific methods have replaced empiricism.

Medical schools are constantly striving to bring a high order of intelligence to the care of the sick. Hospital staffs are infused with teaching spirit. Hospital regulation by organized medicine permits no slackening of vigilance. Certification of specialists by examining boards does much to protect the patient from those who may be incompetent.

Sick people in the well-to-do group may buy all of these remarkable services. People in the large middle group may buy as much as they are able to pay for privately, and may avail themselves of elaborate hospital facilities at rates that range from maintenance costs to below cost services.

People in the indigent group have access to hospitals which are supported by the taxpayer and also receive the benefit of the most approved therapy.

Everybody may choose his own physician except those who seek free treatment in the hospital or clinic where they must accept the services of the physician who may be assigned.

There is very little criticism of the *quality* of medical care. The criticism concerns distribution, demands more free medicine, asks increased subsidy by government, meaning of course more help from the taxpayer, and looks to the implantation on the American people of some compulsory system as one of those in European use.

Health insurance schemes abroad do not take care of the indigent, have not reduced morbidity, but have reduced the physicians to a very low place in the social scale. The present American system, however faulty, cares *for all* classes of people with very much better success.

If the critics would compare the failures of distribution of medical care with the failures of the distribution of education, housing, of clothing or of food, they would doubtless discover that they are talking about the same groups of people.

The care of these people is outside the field of insurance. It is the problem of the taxpayer. Medical service for these people is the job of the physician and he must be paid for his work by the taxpayer.

Here is a task for the medical citizen. Let him step out of his professional seclusion, and let him participate actively in municipal affairs, let him realize that preventive medicine may be greatly advanced by eliminating unsanitary housing, by feeding the undernourished, by clothing those who are unable to so provide for themselves.

Is it not the task of the medical citizen to lead the thought of the taxpayer to the realization that the facilities for medical care of the indigent are his responsibility, that free hospital service must be extended, that perhaps the tax-supported hospital must assume all of the burden with both intern and extern service radiating from the hospital to home care?

Is it not the task of the medical citizen to point out that under our present system, the landlord, the grocer, the clothier house, feed, and clothe the poor for *pay* only, while the doctor assumes their physical care in the hospital and in many homes without fee, and the landlord, the grocer, the clothier and other citizens expect him to continue this unfair sacrifice?

Let us put it baldly. Let the municipality take over the hospital care of the indigent, use the facilities of the hospital for home care of the indigent, and let the doctors who are concerned with this care be paid for their service.

There are already less than eight hundred people in the United States for every physician, and the average annual sickness is less than seven days. About twenty-five hundred physicians die every year, while at present seven thousand take their places. You see that the mathematics are stacked against the physician and if he continues to prevail he will need some very realistic hard work to support his idealism. Another handicap is revealed in the studies of the Brookings Institute which showed that in 1929, a peak year, more than forty-two per cent of American families received less than $1,500 and almost sixty per cent less than $2,000. Such incomes are a little more than subsistence requirements and provide very small margins to cover the emergencies of sickness.

The increasing dependence upon municipal hospitals by people who seem to need free care, the increasing demands upon physicians who serve these hospitals without pay, and the increasing financial embarrassment of the voluntary hospitals, are indices which cannot be ignored. Many hospitals deeply in deficits are surrendering their independence to municipal support, an apparently inevitable trend.

Many hospital people who are unhappy over economic conditions think that they can cure situations by adopting service plans. Hospital service plans, now involving more than two million subscribers, seem to be working well for the hospitals and indirectly for the physician.

All of these efforts are valuable evolutionary measures moving toward better public service without sacrificing the physician to bureaucratic domination. Intramural development of the hospital to the highest degree will not bring it to its true place in our social structure. The day of exclusion and seclusion is past. Generous cooperation with all physicians and with social agencies must be developed. Hospital zones must be planned and all competent physicians living within the zones must be permitted the use of the hospital's facilities. Individualism has been sneered at by welfare groups which are struggling for warm places in snug bureaus, but after all is said, and after studying all of the European service plans which employ more lay managers than physicians, which pay clerks more than doctors, we must pay tribute to the best traditions which we have in this country which are based upon the individual care of the sick by the individual physician.

The American physician represents the most highly educated group of the community, but he rarely functions as a citizen. How can the medical profession expect consideration from our lawmakers while the physician stands aloof from the actual exercise of citizenship? It seems more important than at any time in our history that physicians should take positions of leadership in public activities, thereby indicating their willingness to cooperate to the limit of their abilities in the promotion of projects which seem to have community value. In order to be effective, physicians must have more than superficial knowledge of the machinery of government, they must educate themselves to function as citizens in the best sense of whatever citizenship means or implies. Someone has said recently that many people pass unconsciously from adolescence in obsolescence. Unless American physicians can be aroused from their civic adolescence, a similar judgment will be their inheritance.

THE JOURNAL
OF THE
TENNESSEE STATE MEDICAL ASSOCIATION
Devoted to the Interests of the Medical Profession of Tennessee
Office of Publication, 508 Doctors Bldg., Nashville, Tenn.

Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized July 15, 1932.

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H. H. SHOULDERS, M.D., Editor and Secretary

DECEMBER, 1938

THE ISSUE
SHALL PATIENTS AND DOCTORS RETAIN THEIR FREEDOM OF JUDGMENT IN THE MATTER OF MEDICAL CARE, OR SHALL THIS FREEDOM BE SURRENDERED TO SOME GOVERNMENTAL AGENCY?

EDITORIAL

A Very Enlightening Statement

The medical profession is keenly conscious of the fact that the American Medical Association is being prosecuted before a grand jury in Washington, D. C., as a result of efforts by Mr. Arnold of the Department of Justice. The charge he has brought is to the effect that the association is guilty of monopolistic practices.

Enormous powers attach to the office held by Mr. Arnold. He was not elected to the position. He was appointed. He apparently determines the uses to which he puts these governmental powers.

Since Mr. Arnold has the power of decision as to how he uses the large powers vested in the office he holds, it is worth while to know something of what he is thinking about. He made a disclosure of *his thinking* in an address delivered at the Waldorf-Astoria on October 26, 1938. The following statement on this subject by Father White appeared in the *Boston Post* for November 7, 1938:

Which Path

Referring to Arnold's recent speech in New York, Father White asked: "What will be the future path? Which course will America take, mindful of her founding, her constitution, her guarantee of liberty, and her established tradition as a Christian nation?"

"Will it be the startling course marked out for the nation in a sensational address last week by the erstwhile mayor of Laramie (population 8,000) now assistant attorney general of the United States (population 125,000,000), who emerged from his 'cave of winds' and the words to shock the nation with his pagan proposal? The address was given at the Waldorf-Astoria on October 26, as reported in the *Brooklyn Tablet* of October 28, and confirmed by the press release of the *New York Herald-Tribune*, under whose auspices the forum was held.

A Pagan State

"Thurman Arnold said, 'The state must have its established church. . . . Every organized state must have its established church or, as I have expressed it elsewhere, its folklore. That church must embody the fundamental truth and principle which give the state its greatness. At the same time that church must not impose ridiculous unnecessary sacrifices on the great mass of the people. The fact that today the established church of the modern state is legal and economic, promising security for this life rather than for the hereafter, distinguishes us from the Middle Ages.' "

The inference is clear that Mr. Arnold wishes to achieve a centralization of power over the medical profession, sick people, and all religious denominations to the end that religion and medicine are dominated by the state through some agency.

It is therefore appropriate to ask the question, "Is this the direction the people would have Mr. Arnold take us?"

Human Welfare

This question of human welfare is made to loom large in the news of the day. Much of the news on the subject touches a small phase of the big question of human welfare.

This so-called movement for human welfare obviously has political implications of a serious character.

It seems that we are all prone to forget that the Revolutionary War was fought for the purpose of achieving human welfare. It did achieve all those elements of human welfare which grow out of liberty. It was the welfare of freedom that was sought and achieved.

From that time until now the indigent citizens have not been neglected. Orphanages, community chests, charity hospitals, church activities, medical welfare activities, and other activities, without number, bear testimony of the interest the people have and have had for a long time in this question of human welfare.

These institutions bear testimony also to the fact that people with the ability to share have displayed their disposition to share their comforts and their earnings with those unable to provide for themselves.

Human welfare, when broadly considered, relates itself to all humans. It must not be constricted in its meaning to embrace only those who have been unable to carry their own burdens of citizenship or who have been found unworthy of freedom and been placed in institutions.

It is obvious that too much emphasis is being given to the care of those who have not and cannot take care of themselves, and too little emphasis has been given to those who are able to take care of themselves under normal conditions, but who find it extremely difficult to carry their own burdens and, in addition, support a large political bureaucracy to administer to the needs of those who cannot take care of themselves.

The political implications are menacing, of course, for the reason that an enormous number of people now hold political positions connected with the administration of some governmental welfare measure.

The danger of this was noted by the Alabama Council of Women's Democratic Clubs as a result of a conference on human welfare recently held in Birmingham, Alabama. In a resolution adopted by this organization of women they said, among other things: "We express our contempt for the left-wing agitators who are responsible for actions taken at the conference and record the fact that this was not a conference of Southern people representing the South, but of interlopers with ideas, purposes, and designs inimical to Southern traditions and entirely foreign to the South's peace, happiness, well-being, and progress."

It is well for all to remember then that the radical governmental changes that have been made in European countries were made ostensibly for the purpose of achieving human welfare.

Certainly those who seek to accomplish a radical change in our own form of government would not do so by open declaration of their intentions. They promote their ideas in the name of *human welfare.*

Recent reports from a senatorial committee give emphasis to the importance of recognizing these dangers to the elements of welfare which have been achieved in this country as a result of liberty itself. It is therefore appropriate to consider carefully whether human welfare agitation is not in many instances the front for other designs.

THE TREATMENT OF SYPHILIS

The state board of health has been supplied with a small booklet on "The Treatment of Syphilis by the General Practitioner."

A large number of eminent syphilologists collaborated in the preparation of this booklet.

The commissioner of health, Dr. W. C. Williams, submitted this to the liaison committee for their approval of its distribution to the profession of Tennessee.

The liaison committee unanimously endorsed this book for distribution.

Copies of this book may be obtained free of charge by writing the state department of health, Dr. W. C. Williams, commissioner, Nashville, Tennessee.

HAVEN EMERSON SAYS STATE MEDICINE WON'T WORK

The productive success of preventive medicine through government gives no assurance that curative medicine under government control would be equally successful, Haven Emerson, M.D., New York, declared recently in the opening address before the Columbia University College of Physicians and Surgeons, *The Journal of the American Medical Association* for November 26 reports.

Medicine, Dr. Emerson said, whether curative or preventive, has more to contribute than it has ever been able to deliver in the past, and by wise organization certain still greater benefits may be assured; but to reason from the productive success of preventive medicine through government for social ends that diagnosis and treatment of the individual medical and surgical patient by or under the professional and financial control of government would similarly advance social ends or the quality of medical care, or reduce its cost, is not only questionable, but on its recorded performance elsewhere is at least improbable.

It is well to pause a moment before forming a fixed opinion or committing ourselves irrevocably to a repetition of the blunders and complexities which have arrested the progress of medicine in some other lands and consider the eminence of our own present health status. Certainly no 130,000,000 people under one government or federation of states, and no aggregation of populations representative of such different races or distributed so widely under varied conditions of climate, occupation, and economic status have in the recorded history of man enjoyed such relative certainty as our people of the United States do today in the survival of their offspring in infancy and childhood, or have experienced so low an incidence of the communicable diseases or so high an average level of life expectancy. And yet in the most recent official declaration from technical committees and interdepartmental boards in Washington we read that "preventive health services for the nation as a whole are grossly insufficient."

DEATHS

DR. W. L. CARDEN

Dr. W. L. Carden, Andersonville; aged seventy-four; died November 4.

DR. GARRETT WHITE

Dr. Garrett White, Chapel Hill; University of Tennessee, College of Medicine, 1889; aged seventy-three; died November 29.

NEWS NOTES AND COMMENTS

MISSISSIPPI VALLEY MEDICAL SOCIETY 1939 ESSAY AWARD

The Mississippi Valley Medical Society offers a cash prize of $100, a gold medal, and a certificate of award for the best unpublished essay on a subject of interest and practical value to the general practitioner of medicine.

Members interested in entering the contest for this prize and awards should communicate with Dr. Harold Swanberg, secretary, Mississippi Valley Medical Society, 209-224 W. C. U. Building, Quincy, Illinois.

SECTIONAL MEETING OF THE AMERICAN COLLEGE OF SURGEONS

A sectional meeting of the American College of Surgeons is to be held in Nashville, January 18, 19, 20, 1939.

Nine states are to be represented at this meeting. They are Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, Missouri, and Tennessee.

The program of the meeting will embrace questions related to the big question of medical care, both from a scientific and an administrative standpoint.

The state has a high honor and a heavy responsibility in making this meeting of the greatest possible usefulness.

SCIENTIFIC EXHIBIT AT AMERICAN MEDICAL ASSOCIATION

Application blanks are now available for space in the Scientific Exhibit at the St. Louis Session of the American Medical Association, May 15-19, 1939. Attention is called to the fact that the meeting is a month earlier than usual, and applications close January 5, 1939. Blanks will be sent on request to the Director, Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago, Illinois.

The Philadelphia County Medical Society desires to announce formally the completion of its scientific program for the Fourth Annual Postgraduate Institute to be held in the Bellevue-Stratford Hotel, Philadelphia, during the week beginning March 13, 1939. Address all inquiries to the Philadelphia County Medical Society, Twenty-First and Spruce Streets, Philadelphia, Pennsylvania.

Dr. Abert Sullivan announces the removal of his offices from the Medical Arts Building to 2318 West End Avenue, Nashville.

Dr. Burnett W. Wright announces his removal from Los Angeles, California, to 346 Doctors Building, Nashville, where he will continue the practice of urology.

SOUTHERN MEDICAL JOURNALS WANTED

The Abner W. Calhoun Medical Library of Emory University, Emory University, Georgia, is collecting southern medical periodicals of all dates. Any one who wishes to have such old medical journals reserved and would like to donate them to this library is requested to communicate with Miss Mildred Jordan, librarian, at the above address. It is thought that such literature might be found especially in the libraries of the older practitioners. Complete files of southern medical periodicals for the past two or three decades are possessed by the Calhoun Library, but most files of the older periodicals are very incomplete. The Calhoun Library extends its services to members of the medical profession all over the South. Usually the journals desired are lost, destroyed or stored away in places where they are never seen. At the Calhoun Library they will be taken care of indefinitely in a place where they will be available to medical students and members of the medical profession.

SURVEY NOTES

STUDY OF NEED AND SUPPLY OF MEDICAL CARE

The county commissioners here will not aid by paying any indigent's medical bills. As a result the local physicians have to care for indigents free. No one hesitates to go and they get as good care as the wealthy patients.

There is no organized method or means for care of indigents. The local physicians care for them without financial return. The local county government pays two dollars per day toward hospitalization costs of urgent cases. Every physician here gives very freely of his time when asked.

In so far as I can see the local physicians complain bitterly of their free care of indigent sick, but they do not hesitate to go when called and know they can get no remuneration.

I am instructed by the County Medical Society to state that they are not interested in cooperating in making this survey.

November 8, 1938.

Dr. H. H. Shoulders, Secretary,
Tennessee State Medical Association,
Nashville, Tennessee.

DEAR DR. SHOULDERS:

The object of this letter is to express to you and to the Tennessee State Medical Association our sincere appreciation for the opportunity afforded us in having Dr. Frank E. Whitacre deliver his series of lectures on "Complications of Pregnancy."

These lectures have been of inestimable value to us in that the field has been thoroughly covered in a simple and practical way, making it possible for every doctor present to take home and use the means and methods as set forth by Dr. Whitacre. He has conducted himself and these lectures on a high ethical plane, giving no one room to criticize either man or method.

It is our opinion that the Tennessee State Medical Association cannot sponsor a more worthy project than that of carrying postgraduate work to the home fields of the doctors of the state and we would like to go on record of approving this most valuable method of instruction and again to express our appreciation of being participants of this service.

Most Sincerely,
Bedford County Medical Society and
Doctors from Adjoining Counties.
W. H. Avery, *Secretary.*

Committee on Postgraduate Instruction

Physicians of Tennessee who took the postgraduate course in obstetrics during the past two years will be gratified to learn that the program in pediatrics has now been organized by the Postgraduate Committee. Dr. John M. Lee of Nashville, the new chairman of the Committee for Instruction in Pediatrics, states that the same committee members have been retained by the association for conducting the next two years' program.

The new office headquarters for pediatrics will be located in Nashville. Communications should be addressed to the Postgraduate Committee in Pediatrics, Tennessee State Medical Association, 420 Sixth Avenue, North, Nashville, Tennessee.

WOMAN'S AUXILIARY

President — Mrs. H. E. Christenberry, Knoxville
President-elect — Mrs. Matt Murfree, Murfreesboro
Press and Publicity — Mrs. Frank Fessey, Nashville

Davidson County

On Friday, December 2, at the home of Mrs. Bruce P'Poole on Whitland Avenue was held the December meeting of the Woman's Auxiliary to the Nashville Academy of Medicine and the Davidson County Medical Society. Associate hostesses were Mrs. Hearn Bradley, Mrs. Andrew Hollabaugh, Mrs. J. J. Johns, Mrs. Y. W. Hailey, and Mrs. Sydney W. Ballard. After a delightful program of music conducted by the philanthropic committee, of which Mrs. W. W. Wilkerson, Jr., is chairman, Mrs. Nancy Rice Anderson read "The Little Mixer," by Lillian Shearon.

After the program and luncheon Mrs. Joe Travenick, Jr., president, presided over the business session, during which reports were given by the officers and committee chairmen. New members welcomed were Mrs. T. Fort Bridges, Mrs. J. P. Gilbert, and Mrs. Bernard Weinstein.

Rutherford County

The Woman's Auxiliary to the Stones River Academy of Medicine met Friday, December 3, at the home of Mrs. W. V. Sanford on North Spring Street with Mrs. John Cason as joint hostess. The business meeting was presided over by the president, Mrs. M. B. McCrary of Woodbury.

Plans were made to show some attention to those who were ill this fall.

Miss Marjorie Curtis, student at Tennessee College, gave two humorous readings. The program formerly planned was omitted on account of the death of Dr. Gott's sister. Dr. Gott was to have spoken on his recent European travels.

Our state president, Mrs. H. E. Christenberry, has recently returned from Chicago, where she attended a most interesting and inspiring board meeting of the National Auxiliary. She writes: "Forty-one members, representing eighteen states, were present with splendid reports. Some are doing a great deal more than we are doing and some not so much, but hearing about them gave us an eager impulse to push forward to greater objectives.

"Our contact with other organizations can have a great influence in molding public opinion and with the question of socialized medicine constantly before us in the press of the nation, it behooves each of us to know enough of this all-important subject to answer intelligently and conclusively any questions which may be asked.

"Keep constantly in mind our program of expansion—an increase of membership of at least ten per cent. Keep a record of your activities in Red Cross, Community Chest, Scouting, P.-T. A., and health work. Our cancer program—everything to make a good report for the convention in Jackson in April."

These are but a few excerpts from a letter to all the county presidents from our state president.

And in conclusion, a Merry Christmas and a New Year overflowing with joy and all the things best for each of us.

MEDICAL SOCIETIES

Anderson County:

Anderson County Medical Society met November 7 at Clinton. A report on "Some of the Newer Methods of Diagnosis and Treatment" was given by Dr. Thomas Jennings. It was decided that the December meeting should be a social one, following the election of officers for the coming year.
(Signed) Horton G. DuBard, M.D.,
Corresponding Secretary.

Davidson County:

November 15—"Study of Sixty Cases of Tetanus," by Dr. Jas. A. Kirtley. Discussed by Dr. W. A. Bryan.

The officers elected for 1939 are Drs. R. W. Billington, president; Dr. George Carpenter, vice-president; and Dr. Hamilton Gayden, secretary-treasurer.

Dyer, Lake, and Crockett Counties:

December 7—"The State Health Laboratory Service," by Mr. W. H. Gaub, Nashville.

"The Acute Abdomen," by Dr. J. A. Crisler, Jr., Memphis.

Officers for the coming year were elected.

Greene County:

The Greene County Medical Society met at the Andrew Johnson Clubhouse on Tuesday, December 6.

Dr. W. T. Mathes spoke on "A Challenge to Medicine." Dr. M. A. Blanton opened the discussion.

Dr. Haskell W. Fox was elected president of the society for 1939.

Dr. R. B. Gibson was elected vice-president and Dr. I. E. Phillips, secretary.

The following members were present: Drs. M. A. Blanton, R. B. Gibson, C. B. Laughlin, R. S. Cowles, N. H. Crews, H. W. Fox, W. T. Mathes, Hal Henard, I. E. Phillips, and H. B. Anderson.

(Signed) I. E. Phillips, *Secretary.*

Hamilton County:

December 15—"Roentgen Consideration of Nontuberculous Chest Lesions," by Dr. P. H. Dietrich.

"Inversion of Sex Instinct and Its Relations to Insanity," by Dr. J. B. Swafford.

Hardin, Lawrence, Lewis, Perry, and Wayne Counties:

The Five-County Medical Society met in Waynesboro on November 29.

Dr. L. D. Farragut, Savannah, discussed "Tuberculosis from the Public Health Department Standpoint."

The following is a list of officers elected for 1939:

Dr. J. H. Tilley, Lawrenceburg, president; Dr. Bartow Williams, Kendrick, Mississippi, vice-president for Hardin County; Dr. C. C. Stockard, Lawrenceburg, vice-president for Lawrence County; Dr. W. E. Boyce, Hohenwald, vice-president for Lewis County; Dr. O. A. Kirk, Linden, vice-president for Perry County; Dr. F. H. Norman, Waynesboro, vice-president for Wayne County; Dr. O. H. Williams, Savannah, secretary-treasurer. Dr. J. T. Keeton, Clifton, delegate. Dr. J. V. Hughes, Savannah, alternate.

The next meeting will be in Lawrenceburg on January 31, 1939.

Knox County:

November 15—"Thoracic Surgery with Clinical Cases and Lantern Slides," by Dr. Herbert Acuff. Drs. S. R. Miller and B. B. Cates led the discussion.

November 29—"Gastroscopy with Report of Cases," by Dr. R. G. Waterhouse.

Smith County:

The following officers for 1939 were elected: Dr. E. D. Gross, Carthage, president; Dr. L. D. Sloan, Carthage, vice-president; Dr. Thayer S. Wilson, Gordonsville, secretary-treasurer. Dr. L. D. Sloan, Carthage, delegate to state meeting. Dr. W. B. Dalton, Gordonsville, alternate to state meeting.

(Continued on page 512)

LIST OF OFFICERS OF THE TENNESSEE STATE MEDICAL ASSOCIATION

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- Dr. John B. Youmans, Nashville

Shelby County:

November 15—"Case Reports: Papillary Carcinoma of Renal Pelvis," by Dr. C. D. Allen.

"Menopausal Psychosis," by Dr. Cleveland Payne.

"A New Concept of the Cause and Control of Cardiospasm," by Dr. W. D. Stinson. Discussed by Drs. Richmond McKinney and J. D. Evans.

"Ludwig's Angina and Deep Infections of the Neck," by Dr. C. D. Blassingame. Discussed by Drs. J. J. Shea and W. L. Simpson.

December 6—"Case Reports: Syphilis of the Orbits," by Dr. L. C. Ramsay.

"Coronary Thrombosis Simulating an Acute and Surgical Abdomen," by Dr. E. S. Eddins.

Papers: "The Clinical Significance of Methemoglobinemia," by Dr. W. B. Wendel. Discussed by Drs. G. J. Levy and N. S. Stern.

"Transplantation of the Cornea," by Dr. J. W. McKinney. Discussed by Drs. E. C. Ellett and J. B. Stanford.

OTHER MEDICAL SOCIETIES

Clinical Orthopedic Society

The Clinical Orthopedic Society met in Nashville on October 7.

One hundred twenty visiting orthopedic surgeons from central states were in attendance.

After a day of clinics presented by the members of the Nashville Orthopedic Club at Vanderbilt Hospital the visiting members and wives and a group of the local physicians and their wives were entertained by the local orthopedic surgeons at an old-fashioned barbecue supper and picnic at the country home of Dr. and Mrs. R. W. Billington. The members went by train and automobile to Birmingham for clinics on the following day.

Officers elected were Drs. R. W. Billington, Nashville, president; Dr. H. Earl Conwell, Birmingham, secretary-treasurer.

Meeting of Vanderbilt Medical Society, November 4, 1938

1. "A Case of Necrotizing Pulmonary Endarteritis," by Dr. Homer Swanson.

An eighteen-year-old white female was admitted to hospital with history of exertional dyspnea since early childhood and hemoptysis of eight months' duration. At time of admission patient exhibited a marked malar flush, she was extremely orthopneic and appeared critically ill. Cyanosis was present, but not marked and the fingernails were not clubbed. The heart was enlarged both to the right and left, there was a gallop rhythm at the apex and the second pulmonic sound was accentuated and split. The examination of the lungs revealed only a few moist rales at the right base and the remainder of the physical examination was not remarkable. An X-ray of the chest showed no parenchymal pulmonary involvement, but confirmed the cardiac enlargement. The R.B.C. was 6,000,000 with eighteen grams hemoglobin, the W.B.C. 12,500 with normal differential. An E.K.G. showed a right axis deviation with an inverted T_2. The patient expired suddenly on the evening of admission and at autopsy was found to have a diffuse, primary, pulmonary endarteritis which was probably due to a congenital anomaly of the pulmonary circulation.

The case was discussed by Drs. E. W. Goodpasture and Hugh J. Morgan.

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2. "Traumatic Shock: Further Studies on the Role of the Nervous System," by Drs. Alfred Blalock and Ralph D. Cressman.

The results of experiments on deeply anesthetized animals do not support the contention that nervous impulses are of great importance in the genesis of shock associated with trauma to an extremity. It was emphasized that all types of shock are not explainable by one mechanism.

This paper was presented by Dr. Blalock and was discussed by Dr. Cressman.

3. "An Analysis of the Mechanism Controlling the Heart Rate and Rhythm in Dogs Anesthetized with Cyclopropane and with Ether," by Dr. B. H. Robbins, Dr. O. G. Fitzhugh, and Mr. J. H. Baxter.

Morphine in small doses produces bradycardia in dogs; this is abolished by anesthetization with ether and augmented by anesthetization with cyclopropane. The mechanisms by which ether and cyclopropane abolish or augment the effect of morphine upon the heart rate have been investigated upon six dogs which had progressive destruction of the autonomic paths to the heart. It was found that: (a) The tachycardia under ether anesthesia results from a depression of the vagal action and is not related to any extent to sympathetic stimulation. (b) The maintenance or augmentation of the morphine bradycardia with cyclopropane anesthesia is through an increase in vagal action.

This paper was presented by Dr. B. H. Robbins and was discussed by Dr. Paul M. Lamson.

ABSTRACTS OF CURRENT LITERATURE

ANESTHESIA

By Hugh Barr, M.D.
Medical Arts Building, Nashville

Present Status of Pentothal Sodium as an Anesthetic Agent. Garofalo. Journal of the Connecticut Medical Society, November, 1938.

Pentothal is the sulphur homologue of nembutal. When compared with evipal intravenously anesthesia is smoother, quicker, recovery more rapid, less decrease in blood pressure, and less twitching. It is more depressing to the respiratory center, and there is sometimes a sulphurous taste or smell.

It is indicated in painful examinations or operative procedures that do not extend over fifteen to thirty minutes. It is also useful for the control of convulsions due to cocaine and strychnine poisoning, eclampsia, and tetanus. Its use is contraindicated in children under twelve years of age, asthmatics or those suffering from emphysema, advance tuberculosis, hepatic disease or obstructions to the respiratory tract.

INTERNAL MEDICINE

By R. B. Wood, M.D.
By D. R. Thomas, M.D.
Medical Arts Building, Knoxville

Evaluation of Endocrine Preparations. Michael G. Wohl. Med. Clin. of N. A., November, 1938.

Factors limiting the applicability of hormone therapy:

1. Depression of the function of the gland for which substitution is made. This obviously defeats the purpose in the long run. Insulin therapy, however, does not cause such a result.
2. Production of antihormones and suppression of secretion of other glands. Collip is credited with the statement that the prolonged use of glandular products may produce a refractory state because of antihormone formation.
3. Variability of tissue response to hormone stimulation. Illustrated best by the effect of desiccated thyroid of different tissues in different individuals.
4. Inadequacy of gland products totally to replace physiologic secretions. Thyroid does not always relieve all symptoms due to long standing cases of myxedema.
5. Difficulty in supplying hormones according to body needs. Sudden periodic influxes of glandular material is unlike the process of natural secretion. A delicate regulatory mechanism of hormone supply according to demand is difficult to imitate by hormone therapy.

In treatment of some types of disturbances, recourse must be had to other types of therapy. In some disturbances, disorders of the autonomic nervous system are found either excessive stimulation of the sympathetic or parasympathetic.

There is also some relation between vitamins and hormones. The similarity of vitamins D 2 and E and the sex hormones to each other and the cholesterol group is striking. Animals deficient in vitamin B are lacking in gonadotropic hormone of the anterior pituitary. There is clinical and laboratory evidence to indicate that vitamin A is a strong antagonist to thyroxin.

Thyroid extract is used in myxedema and hypothyroidism. It should be begun with small doses and gradually increased. The patient should be under the care of a physician during the entire period of treatment. Thyroid is also useful in treatment of nephrosis, in amenorrhea, and Frohlich's syndrome and occasionally in patients with obesity.

Parathyroid is used in postoperative tetany.

Pituitary Gland.—Pitressin is used for relief of intestinal atony in postoperative cases, the tympanites of pneumonia, and the diuresis of diabetes insipidus. It may be given by hypo or by the intranasal route.

Anterior lobe preparations contain a growth hormone and a certain amount of gonadotropic and thyrotropic and possibly adrenotropic principles.

Pituitary dwarfism is not due apparently to deficiency of the pituitary alone and will not yield to injections of the extract. Sex stimulating hormones have so far yielded no convincing results. Some observers report beneficial results in hypopituitarism from use of pituitary gland.

Female Sex Hormones.—Those concerned in menstruation are two ovarian hormones, estrone and progesterone, and the anterior pituitary gonadotropic hormones. The follicular hormone, estrone, stimulates the endometrium to proliferation and promotes development of the secondary sex characters. Progesterone stimulates the endometrium to secretory activity and desensitizes the uterus to the oxytoxic principle of the posterior pituitary. The anterior pituitary gonatropic hormone stimulates the ovary to follicle ripening and luteinization.

Replacement therapy is limited to the conditions where there is a definite deficiency of one of the above-mentioned hormones. Estrone is useful at the menopause and in about one-half the cases of amenorrhea and functional sterility. At times it may stimulate an infantile uterus to growth. Ten thousand to fifty thousand international units of estrone every five days may favorably influence vasomotor symptoms and pruritus of the menopause. Oral administration is efficacious.

Progesterone therapy is still in its infancy, but habitual abortion and certain cases of dysmenorrhea may respond.

Gonadotropic-like substance has proved of value in functional uterine bleeding of the young, but at the menopause it should not be used unless preceded by a diagnostic curettage.

Cryptorchidism.—In male gonadal underdevelopment treatment with pregnancy urine extract as antuitrin S, follutein and A P L has proved of definite benefit. Two hundred rat units three times weekly for four to eight weeks, preferably started around the ninth year. If failure results in cryptorchic children surgery should be resorted to.

Adrenal Gland.—The uses of epinephrin are well known. From the cortex of the gland Kendall isolated one factor related to mineral metabolism and another associated with functions of muscular tissue. Pottinger and Simonsen prepared extracts which had female sex repressive properties and male stimulative effects. The use of this substance in Addison and Simmond's disease with cortical atrophy is described.

OBSTETRICS AND GYNECOLOGY

By Hamilton V. Gayden, M.D.
Suite 234 Doctors Building, Nashville

Endometriosis. V. S. Counseller. American Journal of Obstetrics and Gynecology, 36: 877, November, 1938.

The generally accepted idea of endometriosis is of an abnormal growth of endometrial tissue in an ectopic position. Endometriosis is an extremely important disease of young women, and its most predominant symptom is dysmenorrhea of an acquired or progressive type. Vesical and rectal pain superimposed on dysmenorrhea is almost always diagnostic. Diffuse pelvic soreness, brought about by walking or jarring of the pelvis in any way, is suggestive. In the majority of cases endometriosis and its associated lesions of the uterus and adnexa will require radical surgical treatment. Radical treatment was carried out in 79.3 per cent of the present series of 884 cases. Cases in which conservative procedures are to be carried out must be very carefully selected if recurring lesions and subsequent treatment are to be avoided. The author believes that it is safer to err on the side of radicalism than to attempt preservation of ovarian function in those cases in which there is some involvement of both adnexa or in which there is considerable involvement of one adnexa and the adjacent uterine wall.

OPHTHALMOLOGY

By Robert J. Warner, M.D.
Doctors Building, Nashville

Eye Injuries from War Gases. Viggo Clemmesen. American Journal of Ophthalmology, November, 1938.

In the event of any modern war, it must be assumed that attacks on the civil population are very likely and that in these attacks poison gas will be used. All known war gases are capable of causing injuries to the eyes. General prevention of gas injuries would be aimed at by distribution of gas masks, construction of available bombproof and gasproof rooms, and general training in first-aid treatment.

War gases are divided for practical purposes, according to their actions, into four groups: (1) Tear gases, the commonest being chloracetophenon. The eyes should be washed with a two per cent sodium-bicarbonate solution or 0.4 per cent sulphite in water and glycerine one to four. (2) Sneezing gases. These are compounds of arsenic, of which lewisite is one. Eye injuries from these are mostly superficial and immediate treatment is the irrigation of the eye with mild alkaline solutions. (3) Gases affecting the lungs—phosgen, diphosgen, and nitrochloroform (the green gases). These are very irritating, especially to the lungs and to all mucous surfaces as well as to the eyes. Boric-acid solution, as well as mild alkaline solutions and alkaline ointments, are useful. (4) Gases irritating the skin. The most used in this group is commonly known as mustard gas (yellow gas). Mustard gas produces the severest eye lesions of all: irritation of the conjunctiva, opacities, and ulcerations of the cornea, often with perforation and blindness. The best protection is offered by the gas mask. Dry chloride of lime (calcium hypochlorite) rubbed into the skin of the eyelids is a protectant. Alkaline solutions and ointments, containing calcium carbonate and lime water, are useful.

ROENTGENOLOGY

By Franklin B. Bogart, M.D.
Medical Arts Building, Chattanooga

Resolving Lobar Pneumonia in Adults Simulating Tuberculosis in the Roentgenogram. S. Cohen. Am. J. R. and R. T., Vol. 40, No. 2, p. 202, August, 1938

Five case histories are briefly reported with reproductions of roentgenograms, which illustrate the fact that resolving pneumonia may be easily confused with tuberculosis. All of these cases had been incorrectly diagnosed as tuberculosis. Some of the types of tuberculosis which these incompletely resolved pneumonias simulated were:

1. Exudative tuberculosis at the apex.
2. Exudative tuberculosis at the base, with or without bronchiectasis.
3. Extensive caseous tuberculosis at one upper with cavity formation (ring shadows may be present due to rapid clearing of pneumonic infiltration in some areas and delayed clearing in others, which can be mistaken for a cavity).
4. Chronic fibroid tuberculosis, with recent activity.

Aids for avoiding making an incorrect diagnosis of active tuberculosis when incompletely resolved pneumonia is present:

1. Do not base an opinion on a single X-ray examination, when there is any point in the history which may suggest the presence of a recent upper respiratory infection.
2. Insist on repeated sputum examinations in all questionable lesions. A search should be made for pneumococci, as well as for tubercular bacilli.
3. Do tuberculin tests; while a positive test is of little value, a negative test with 1.0 milligram of O. T. is of great value in a suspected tuberculous case.

Factors in delayed resolution:

1. Sex—Delayed resolution occurs more frequently in males than in females.
2. Race—Relatively higher incidence among the colored race than among the white.
3. Location—Lower right lobe most frequently involved.
4. Age—Some believe that age bears no relation, while others believe that resolution is slower in older persons.
5. Unilobar lesions reside more quickly than multi-lobar ones.
6. Administration of antipneumococcic serum does not seem to influence the rate of resolution in these cases of delayed resolution.
7. Delayed resolution occurs about as frequently in nonsyphilitics as in syphilitics.
8. Resolution will very often be delayed if lobes or bronchopneumonia is superimposed upon a previously damaged lung (as in silicosis, bronchiectasis, tuberculosis of the chronic fibroid type).

Comment by the abstractor:

An article of this type should be read by all medical men who are undertaking to interpret their own chest films. It furnishes an excellent discussion of one of the common mistakes made by those with limited experience in the interpretation of chest films.

SURGERY—GENERAL AND ABDOMINAL

By Battle Malone, II, M.D.
1400 Monroe Avenue, Memphis

Abscesses About the Anus and Rectum. Warren R. Raney, Surgical Clinics of North America, October, 1938.

Abscesses about the perineum are usually secondary to infection in the anus or rectum, most frequently originating in an anal crypt or less often from lacerations of the anorectal mucosa by foreign bodies in the stool. The symptoms are a dull throbbing ache in the perineum, increasing to a pulsating pain, fever, fast pulse, and chilly sensations or chills. There is swelling and redness of the perineum.

The three principal types of abscess are: First, the superficial, forming directly beneath the skin of the anal margin. Second, there is a deeper type where the abscess forms in the fatty ischiorectal tissue. Here pain is more severe. The third type, rarely seen, is the supralevator collection of pus, which may originate at the mucocutaneous line, but is often caused by perforation of the bowel by foreign bodies such as fish or chicken bones.

In the examination of such a patient no attempt should be made to elicit fluctuation of pus. Extreme gentleness should be employed in the examination. In the third type mentioned above, differential diagnosis between a perirectal abscess and one secondary to the prostatic gland must be made. The introduction of a gloved finger into the anus and rectum will produce pain on pressure opposite the abscess formation; also gentle pressure over the abscess site will often result in the discharge of pus from the anal orifice. If digital examination produces severe pain, it should not be done without general anesthesia. The author employs a third step in diagnosis in which a wheal is made in the skin over the suspected abscess and an aspirating needle and syringe used to localize the pus.

Treatment consists of hot fomentations and sitz baths until pus is localized. In superficial abscesses a small amount of infiltration of the skin with one-half per cent novocain will permit incision and drainage. If the skin has been too completely involved in the infection, local infiltration is not wise and gas anesthesia or ethyl chloride freezing is employed. An incision is made that will give adequate drainage and if the superficial internal opening can be readily seen and the tract can be laid open without cutting the sphincter, this is done and the wound packed loosely. It is thought unwise to cut the sphincter when incising these abscesses because of the danger of exposing uninfected tissue. In ischiorectal abscesses the author makes an incision adequate for drainage, but warns against rough manipulation and packing. The fistula which may develop can be treated at a later date. No such abscess should be drained through the rectum. Rubber dams are used for drains; never gauze or rubber tubing. After two days sitz baths are instituted. There is an abscess seen in women, occurring at the anterior circumference of the anal sphincter at the base of the labia majora. This type is hard to cure and the abscess and fistula are treated in three stages. First, the abscess is opened; second, an incision is made at the sphincter muscle and a silver wire is placed about the sphincter and is twisted down snugly; third, the sphincter muscle is cut across after the abscess cavity is entirely healed.

Improper injection of hemorrhoid has become an etiological factor in anorectal abscesses. The author briefly discusses the etiological factors and differential diagnosis of anorectal abscesses.

Tuberculous abscesses are discussed separately. The incidence of this type is not nearly so high as was once thought. Every case of rectal fistula that is indolent and painless should have an X-ray examination of the lungs. These abscesses are treated just as the simple types mentioned above. The resulting fistulae are very difficult to cure and unless the internal opening can be seen superficially, surgical attempts to remove the tracts are usually unsuccessful.

UROLOGY

By Tom R. Barry, M.D., F.A.C.S.
By G. A. Williamson, Jr., M.D.
Medical Building, Knoxville

Urinary Infections in Infancy and Childhood: Diagnosis and Treatment. Henry F. Helmholz, M.D., Journal of American Medical Association, November 5, 1938.

Acute urinary infections usually manifest themselves with fever and pyuria, while the chronic infections may be found accidentally. A primary infection may be superimposed on a kidney whose function is impaired from prolonged stasis.

Fever that occurs without a demonstrable cause in infancy or childhood is usually a clue to urinary infection, and an examination of the urine establishes the diagnosis.

When a urinary infection is found, it is important to know what type or types of bacteria are causing it. This can be determined by staining the urinary sediment with Gram's stain or by culture of the urine.

In cases of impaired renal function, the kidney will not secrete urine of a sufficiently low pH or sufficiently high concentration of a drug to be bactericidal when the action depends on definite acidity of the urine. This may apply to one or both kidneys.

The presence of urinary stasis can be discovered before the kidneys are seriously injured by making excretory urograms and, when found, should be relieved. The foci of infection, especially in the entire urinary tract, should be eradicated.

The type of infection, the renal function, and the presence or absence of urinary stasis being known, the drug of choice can be selected. Sulfanilamide and mandelic acid stand out above all other urinary antiseptics.

Sulfanilamide has a number of advantages over mandelic acid. It can be given in the acute stage, its bactericidal effect is not entirely dependent on the reaction of the urine, although it works better in alkaline urine, and it is excreted in bactericidal quantities by kidneys with impaired function. It is the drug of choice in alkaline forming infections, but it is a complete failure in streptococcus faecalis.

Mandelic acid is effective in both coccic and bacilli infection where the urine is kept sufficiently acid. It is especially useful in streptococcus faecalis infection where sulfanilamide always fails.

The urine should be checked for the presence of bacteria for a period after medication has been discontinued. In those cases where there are recurring infections, there should be a complete urological checkup.

BOOK REVIEW

Guiding Human Misfits. Alexandra Adler, M.D. Macmillan Company, New York, 1938. $1.75.

"Guiding Human Misfits" is a reasonable, practicable book of the School of Individual Psychology founded by the late Dr. Alfred Adler.

This book is written by his daughter.

It is one that can be extremely useful to fathers, mothers, and teachers as well as to physicians.

It makes no startling statements and none which are difficult to understand or accept, but it does throw a clarifying light on individual reactions in everyday events.

It has the advantage (rare among medical books) of being amusing as well as absorbing and informative reading.

One might hope for somewhat deeper analysis of some of the problems discussed in this book, particularly in the chapter on the significance of dreams. However, according to the discussions of case histories the interpretations given the patient were enough to provide a working solution which would indicate the validity of this type of treatment.

This book has a far wider scope than might at first be supposed from the title since human beings are seldom, if ever, completely fitted to their environment. It is a valuable addition to the bibliography of psychological treatment.

This is a book that is apt to be of more use to the laity than to the profession. M. M.

1938 MEMBERS OF TENNESSEE STATE MEDICAL ASSOCIATION

The following list of members of the Tennessee State Medical Association is published in accordance with a provision in the constitution of the association.

The list of active members includes the names of those who were members on December 10, 1938.

The names of veteran members appear on a separate list following active members.

The arrangement of names is as follows:

The counties are arranged alphabetically. Towns in each county are arranged alphabetically. Members in the towns are arranged alphabetically. Names of members residing outside the state are arranged alphabetically on a separate list under a separate heading.

A list of the members who have died during the year 1938 is published on the last page of this section.

If any errors are found kindly report them to the JOURNAL, 508 Doctors Building, Nashville.

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JOHNSON COUNTY

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J. R. Butler
R. O. Glenn

KNOX COUNTY

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A. R. Garrison

Concord
M. F. Cobb

Fountain City
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J. C. Morris
J. M. Van De Griff
Joe L. Raulston

Inskip
J. B. Parker

Knoxville
Eugene Abercrombie
Herbert Acuff
Ellen Alexander
Chas. Armstrong
W. S. Austin
Troy P. Bagwell
C. E. Barnett
Tom R. Barry
M. L. Black
W. A. Bois
Horace E. Brown
P. H. Cardwell
C. J. Carmichael
H. L. Carroll
Jack Chesney
H. E. Christenberry
W. F. Christenberry
C. L. Chumley
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Chas. F. Clayton
Edward S. Clayton
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M. M. Copenhaver
William R. Cross
H. K. Cunningham
R. V. Depue
W. T. DeSautelle
W. F. Dorsey
Thos. B. Drinnen
J. Gilbert Eblen
E. M. Edington
W. H. Enneis
Frank Faulkner
Edgar H. Ford
J. L. Fuqua
J. H. Gammon
Edgar L. Grubb
Glen D. Grubb
E. A. Guynes
J. R. Hamilton
B. I. Harrison
O. S. Hauk
Louis A. Haun
George Henson
Jesse C. Hill
John R. Hill
Oliver W. Hill
Oliver W. Hill, Jr.
Victor Hill
S. H. Hodge
A. G. Hufstedler
Harry H. Jenkins
C. B. Jones
J. H. Keeling
J. H. Kincaid
H. L. Kitts
A. Hobart Lancaster
Robert P. Layman
J. Marshall Lea
Robert S. Leach
Forest S. LeTellier
H. C. Long
Walter Luttrell
Wm. N. Lynn
H. H. McCampbell
T. L. McCarter
H. T. McClain
W. C. McClain
Richard McIlwaine
R. L. McReynolds
S. R. Miller
Ralph Monger
John L. Montgomery
Chas. F. Mooney
John D. Moore
Owen Moore
Clint H. Morgan
J. F. Morrow
J. B. Naive
J. B. Neil
Eugene P. Nicely
Frank O. Nichols
R. P. Oppenheimer
Nichols Pappas
Reese Patterson
Robt. F. Patterson, Jr.
Herschel Penn
Jarrell Penn
H. Dewey Peters
H. L. Peters
S. B. Peters
B. F. Peterson
S. Joe Platt
E. V. Pollard
Herbert L. Pope
W. W. Potter
Bruce R. Powers
R. M. Powell
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Robt. G. Reaves
W. D. Richards
M. S. Roberts
Olin Rodgers
A. L. Rule
C. C. Smeltzer
Andrew Smith
Joe T. Smith
Rufus Smith
Vernon I. Smith
G. W. Smithers
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J. M. Stockman
G. W. Stone
R. G. Tappan
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D. R. Thomas
Geo. M. Trotter
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Alvin J. Weber, Jr.
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G. A. Williamson
E. G. Wood
R. B. Wood
W. P. Wood
R. M. Young
E. Russell Zemp

Mascot
H. J. Bolen

Powell
M. F. Cruze

LAKE COUNTY

Ridgely
W. S. Alexander
R. E. Hellen
W. L. Sumners

Tiptonville
R. W. Griffin
J. P. Moon
E. B. Smythe

Cates
J. P. Shearon
(Mbr. Haywood Co.)

LAUDERDALE COUNTY

Ripley
J. L. Dunavant
L. W. Frame
J. B. Lackey
J. R. Lewis
Thos. E. Miller
J. H. Nunn
C. W. Polk

Halls
J. G. Olds

Henning
Thos. F. Pipkin

LAWRENCE COUNTY

Lawrenceburg
V. H. Crowder
J. W. Danley
J. A. Gallaher
L. C. Harris
T. A. McAmis
C. C. Stockard
T. J. Stockard
J. H. Tilley

Loretta
A. D. Cole

LINCOLN COUNTY

Ardmore
D. T. Hardin

Blanche
J. W. Maddox

Boonshill
J. E. Sloan

Elora
A. L. Griffith

Fayetteville
M. F. Brown
J. D. Bryant
W. F. Cannon
C. L. Goodrich
Ben H. Marshall
R. E. McCown
J. V. McRady
J. M. McWilliams
R. T. Odom
T. A. Patrick
M. C. Woodfin
A. L. Yearwood

Petersburg
W. S. Joplin

LOUDON COUNTY

Lenoir City
J. A. Leeper
J. A. Mourfield
W. D. Padgett
(Mbr. Knox Co.)

Loudon
Arthur P. Harrison

S. G. Saunders
(Mbr. Monroe Co.)
J. R. Watkins

MACON COUNTY

Lafayette

J. Y. Freeman
D. D. Howser
A. Y. Kirby

Red Boiling Springs

H. C. Hesson
G. Ulleth

MADISON COUNTY

Bemis

H. H. Herron
Kelly Smythe
Paul E. Wylie
(Mbr. 5 Co.)

Gadsden

F. C. James

Jackson

J. G. Anderson
B. C. Arnold
Glen Batten
G. H. Berryhill
G. W. Brasher
R. S. Brown
Swan Burrus
J. Lawrence Cochran
Tate B. Collins
J. L. Crook
J. E. Douglass
W. B. Eason
W. T. Fitts
Earl Goyer
Herman Hawkins
S. M. Herron
Jefferson D. Hopper
G. Frank Jones
Horace L. Jones
J. W. McClaran
John B. Nuckolls
Buford L. O'Neal
S. T. Parker
J. C. Pierce
J. E. Powers
W. G. Saunders
W. K. Sullivan
Jack R. Thompson
Chas. F. Webb
R. B. White
G. L. Williamson

Mercer

J. M. Curry
Glen T. Scott

Pinson

R. S. Hearn

Springcreek

E. E. Waller

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South Pittsburg

Wm. K. Owen

Whitwell

Isaac Barnes
(Mbr. White Co.)
W. H. Price

MARSHALL COUNTY

Belfast

J. W. Reed
(Mbr. Bedford Co.)

Cornersville

W. F. Copeland
(Mbr. Giles Co.)

Farmington

W. T. Sharp
(Mbr. Bedford Co.)

Lewisburg

J. G. Waldrop
(Mbr. Giles Co.)
H. B. Disharoon
(Mbr. Bedford Co.)

Petersburg

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(Mbr. Bedford Co.)

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J. T. Hart
Robin Lyles
James Miller
R. S. Perry
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E. M. Ragsdale
G. C. Williamson
J. W. Wilkes
Watt Yeiser

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Mt. Pleasant

G. C. English
J. H. Jones
C. D. Walton
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Springhill

B. H. Woodard

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H. O. Anderson
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David M. Cowgill
R. C. Kimbrough
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Sweetwater

W. H. Arrants
L. L. Barnes
W. J. Cameron
J. A. Hardin
R. M. Price
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Tellico Plains

W. W. Leonard
W. A. Rogers
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Woodland Mills

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V. A. Hall
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R. G. Henderson
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Louis Levy
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P. M. Lewis
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Battle Malone, II
Robt. Mansfield
Phillip Markle
C. H. Marshall
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Chas. R. Mason
J. W. Mason
Robin F. Mason
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E. D. Mitchell
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Wallace P. Moore
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J. T. Moss
T. C. Moss
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Richmond McKinney
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Millington

Albert S. Witherington

Normal

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H. W. Priddy
George Jackson

Oakville

James A. Price
S. T. Rucker

Seymour

John C. Sharp

Woodstock

L. C. Johnson

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Brush Creek

A. O. Parker

Carthage

W. F. Boze
E. D. Gross
R. E. Key
L. R. Sloan

Dixon Springs

Rhea E. Garrett

Gordonsville

W. B. Dalton
Thayer S. Wilson

Pleasant Shade

J. J. Beasley

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Indian Mound

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Aaron Cole

Shouns

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Atoka

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Hartsville

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R. E. Stack
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Anthony's product enables you to secure the rich natural minerals of milk and the time-tested Vitamin D of cod-liver oil, all combined in one palatable, automatic, and economical food. Homogenization lowers the curd tension and is easily digested.

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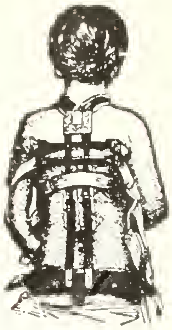

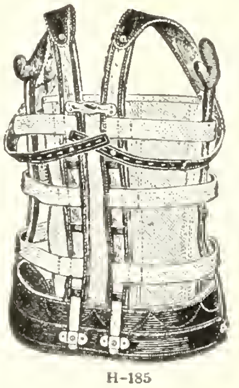

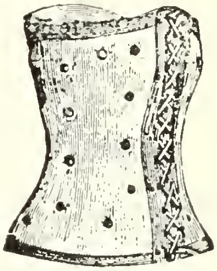

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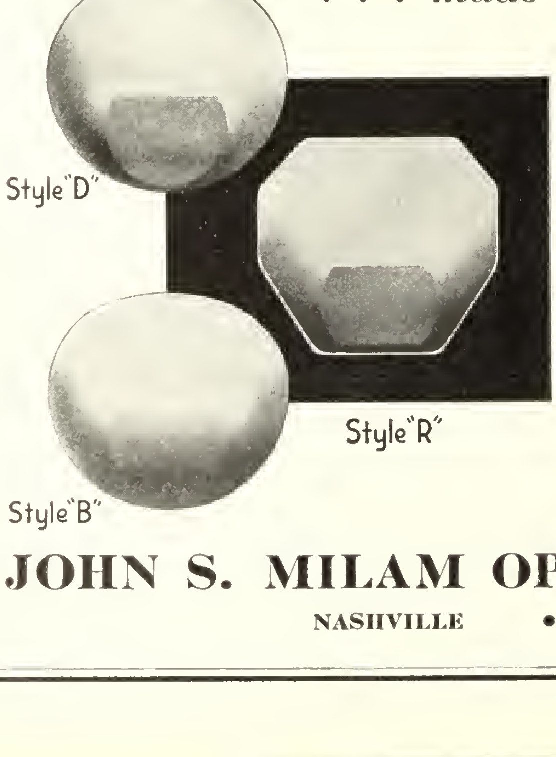

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